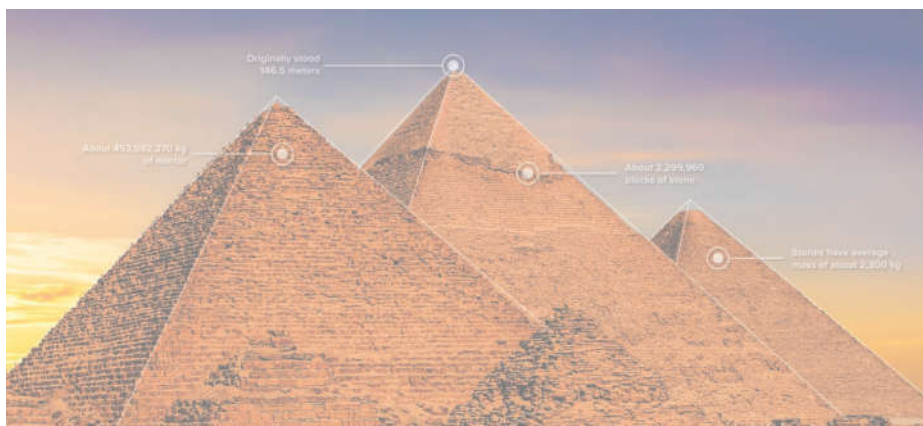


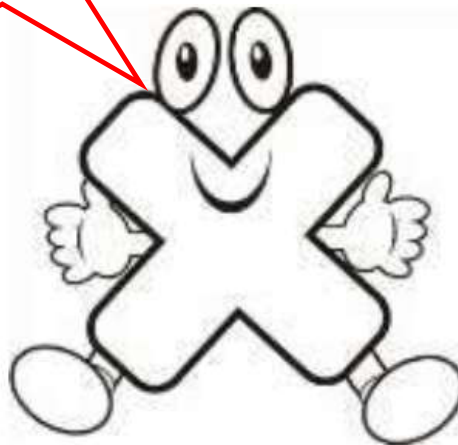
# MATHEMATICS PRIMARY FOUR SECOND TERM

Part (1)



$\begin{array}{r} 1 \\ \times 1 \\ \hline 1 \end{array}$	$\begin{array}{r} 1 \\ \times 2 \\ \hline 2 \end{array}$	$\begin{array}{r} 1 \\ \times 3 \\ \hline 3 \end{array}$	$\begin{array}{r} 1 \\ \times 4 \\ \hline 4 \end{array}$	$\begin{array}{r} 1 \\ \times 5 \\ \hline 5 \end{array}$	$\begin{array}{r} 1 \\ \times 6 \\ \hline 6 \end{array}$	$\begin{array}{r} 1 \\ \times 7 \\ \hline 7 \end{array}$	$\begin{array}{r} 1 \\ \times 8 \\ \hline 8 \end{array}$	$\begin{array}{r} 1 \\ \times 9 \\ \hline 9 \end{array}$	$\begin{array}{r} 1 \\ \times 10 \\ \hline 10 \end{array}$	$\begin{array}{r} 1 \\ \times 11 \\ \hline 11 \end{array}$	$\begin{array}{r} 1 \\ \times 12 \\ \hline 12 \end{array}$
$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$	$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$	$\begin{array}{r} 2 \\ \times 4 \\ \hline 8 \end{array}$	$\begin{array}{r} 2 \\ \times 5 \\ \hline 10 \end{array}$	$\begin{array}{r} 2 \\ \times 6 \\ \hline 12 \end{array}$	$\begin{array}{r} 2 \\ \times 7 \\ \hline 14 \end{array}$	$\begin{array}{r} 2 \\ \times 8 \\ \hline 16 \end{array}$	$\begin{array}{r} 2 \\ \times 9 \\ \hline 18 \end{array}$	$\begin{array}{r} 2 \\ \times 10 \\ \hline 20 \end{array}$	$\begin{array}{r} 2 \\ \times 11 \\ \hline 22 \end{array}$	$\begin{array}{r} 2 \\ \times 12 \\ \hline 24 \end{array}$	
$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array}$	$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array}$	$\begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$	$\begin{array}{r} 3 \\ \times 6 \\ \hline 18 \end{array}$	$\begin{array}{r} 3 \\ \times 7 \\ \hline 21 \end{array}$	$\begin{array}{r} 3 \\ \times 8 \\ \hline 24 \end{array}$	$\begin{array}{r} 3 \\ \times 9 \\ \hline 27 \end{array}$	$\begin{array}{r} 3 \\ \times 10 \\ \hline 30 \end{array}$	$\begin{array}{r} 3 \\ \times 11 \\ \hline 33 \end{array}$	$\begin{array}{r} 3 \\ \times 12 \\ \hline 36 \end{array}$		
$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$	$\begin{array}{r} 4 \\ \times 5 \\ \hline 20 \end{array}$	$\begin{array}{r} 4 \\ \times 6 \\ \hline 24 \end{array}$	$\begin{array}{r} 4 \\ \times 7 \\ \hline 28 \end{array}$	$\begin{array}{r} 4 \\ \times 8 \\ \hline 32 \end{array}$	$\begin{array}{r} 4 \\ \times 9 \\ \hline 36 \end{array}$	$\begin{array}{r} 4 \\ \times 10 \\ \hline 40 \end{array}$	$\begin{array}{r} 4 \\ \times 11 \\ \hline 44 \end{array}$	$\begin{array}{r} 4 \\ \times 12 \\ \hline 48 \end{array}$			
$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$	$\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$	$\begin{array}{r} 5 \\ \times 7 \\ \hline 35 \end{array}$	$\begin{array}{r} 5 \\ \times 8 \\ \hline 40 \end{array}$	$\begin{array}{r} 5 \\ \times 9 \\ \hline 45 \end{array}$	$\begin{array}{r} 5 \\ \times 10 \\ \hline 50 \end{array}$	$\begin{array}{r} 5 \\ \times 11 \\ \hline 55 \end{array}$	$\begin{array}{r} 5 \\ \times 12 \\ \hline 60 \end{array}$				
$\begin{array}{r} 6 \\ \times 6 \\ \hline 36 \end{array}$	$\begin{array}{r} 6 \\ \times 7 \\ \hline 42 \end{array}$	$\begin{array}{r} 6 \\ \times 8 \\ \hline 48 \end{array}$	$\begin{array}{r} 6 \\ \times 9 \\ \hline 54 \end{array}$	$\begin{array}{r} 6 \\ \times 10 \\ \hline 60 \end{array}$	$\begin{array}{r} 6 \\ \times 11 \\ \hline 66 \end{array}$	$\begin{array}{r} 6 \\ \times 12 \\ \hline 72 \end{array}$					
$\begin{array}{r} 7 \\ \times 7 \\ \hline 49 \end{array}$	$\begin{array}{r} 7 \\ \times 8 \\ \hline 56 \end{array}$	$\begin{array}{r} 7 \\ \times 9 \\ \hline 63 \end{array}$	$\begin{array}{r} 7 \\ \times 10 \\ \hline 70 \end{array}$	$\begin{array}{r} 7 \\ \times 11 \\ \hline 77 \end{array}$	$\begin{array}{r} 7 \\ \times 12 \\ \hline 84 \end{array}$						
$\begin{array}{r} 8 \\ \times 8 \\ \hline 64 \end{array}$	$\begin{array}{r} 8 \\ \times 9 \\ \hline 72 \end{array}$	$\begin{array}{r} 8 \\ \times 10 \\ \hline 80 \end{array}$	$\begin{array}{r} 8 \\ \times 11 \\ \hline 88 \end{array}$	$\begin{array}{r} 8 \\ \times 12 \\ \hline 96 \end{array}$							
$\begin{array}{r} 9 \\ \times 9 \\ \hline 81 \end{array}$	$\begin{array}{r} 9 \\ \times 10 \\ \hline 90 \end{array}$	$\begin{array}{r} 9 \\ \times 11 \\ \hline 99 \end{array}$	$\begin{array}{r} 9 \\ \times 12 \\ \hline 108 \end{array}$								
$\begin{array}{r} 10 \\ \times 10 \\ \hline 100 \end{array}$	$\begin{array}{r} 10 \\ \times 11 \\ \hline 110 \end{array}$	$\begin{array}{r} 10 \\ \times 12 \\ \hline 120 \end{array}$									
$\begin{array}{r} 11 \\ \times 11 \\ \hline 121 \end{array}$	$\begin{array}{r} 11 \\ \times 12 \\ \hline 132 \end{array}$										
$\begin{array}{r} 12 \\ \times 12 \\ \hline 144 \end{array}$											

If you do not  
memorize  
well, there  
is no need  
to continue.



1	1	1	1	1	1	1	1	1	1	1	1
× 1	× 2	× 3	× 4	× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12

2	2	2	2	2	2	2	2	2	2	2	2
× 2	× 3	× 4	× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12	

3	3	3	3	3	3	3	3	3	3	3	3
× 3	× 4	× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12		

4	4	4	4	4	4	4	4	4	4	4	4
× 4	× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12			

5	5	5	5	5	5	5	5	5	5	5	5
× 5	× 6	× 7	× 8	× 9	× 10	× 11	× 12				

6	6	6	6	6	6	6	6	6	6	6	6
× 6	× 7	× 8	× 9	× 10	× 11	× 12					

7	7	7	7	7	7	7	7	7	7	7	7
× 7	× 8	× 9	× 10	× 11	× 12						

8	8	8	8	8	8	8	8	8	8	8	8
× 8	× 9	× 10	× 11	× 12							

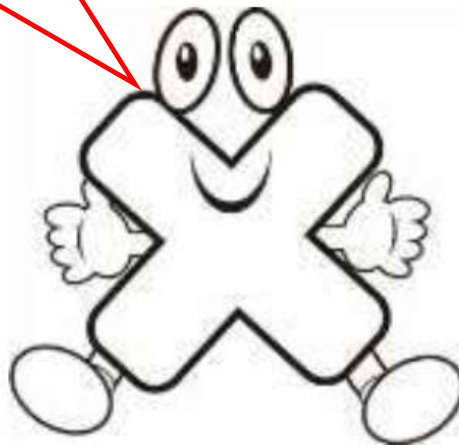
9	9	9	9	9	9	9	9	9	9	9	9
× 9	× 10	× 11	× 12								

10	10	10	10	10	10	10	10	10	10	10	10
× 10	× 11	× 12									

11	11	11	11	11	11	11	11	11	11	11	11
× 11	× 12										

12	12	12	12	12	12	12	12	12	12	12	12
× 12											

If you do not  
memorize  
well, there  
is no need  
to continue.







UNIT

7

Theme 2 | Mathematical Operations and  
Algebraic Thinking

# Unit 7 Multiplication and Division: Computation and Relationships





## Concept (2): Dividing by 1-Digit Divisors

### Learning Targets

- I can identify the **dividend**, **divisor**, and **quotient** of a division problem.
- I can solve division problems.
- I can explain what a **remainder** represents in a division problem.



**Division Patterns** Label the parts in the equation using the words divisor, dividend, and quotient. Then, look for patterns to complete the remaining problems. The first problem in the table is an example that is filled in for you.

$$600 \div 3 = \text{Answer}$$

600 is called the \_\_\_\_\_.

3 is called the \_\_\_\_\_.

The answer is called the \_\_\_\_\_.



There were 540 crayons in a large bin. Students were asked to put 9 crayons in a small box for each student to use. How many small boxes will students need in order to complete this task?



Put the suitable sign (<), (>) or (=):

$350 \div 7$	.....	$450 \div 5$
$2,000 \div 5$	.....	$4,000 \div 5$
$400 \div 4$	.....	$1,000 \div 2$
$30,000 \div 6$	.....	$20,000 \div 4$
$24,000 \div 8$	.....	$20,000 \div 5$
$450 \div 5$	.....	$8,100 \div 9$
$2,400 \div 6$	.....	$1,500 \div 3$
$64,000 \div 8$	.....	$4,800 \div 6$
$300 \div 5$	.....	$400 \div 8$
$45,000 \div 9$	.....	$2,500 \div 5$



Equation	Related Fact	Quotient
$600 \div 3$	$6 \div 3 = 2$	200
$150 \div 5$		
$1,200 \div 6$		
$200 \div 4$		
$700 \div 7$		
$6,400 \div 8$		
$4,500 \div 9$		
$270 \div 3$		





**Use Arrays to Divide** Draw to complete each array.  
Then complete the number sentence.

1. 

$8 \div 4 = \underline{\hspace{2cm}}$

2. 

$21 \div 3 = \underline{\hspace{2cm}}$



## Partial Quotient Algorithm

**Model Match** Write the division problem that matches each area model. Remember to include the quotient and remainder, if there is one.

1. 6

300	60	18
50	10	3



4

4,000	1,200	400	28	
1,000	300	100	7	R3





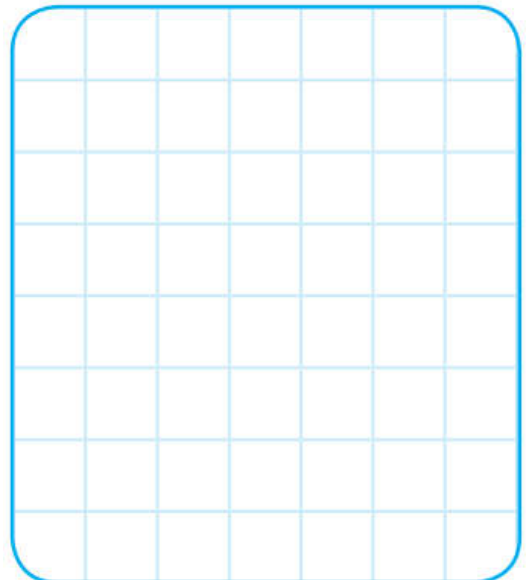
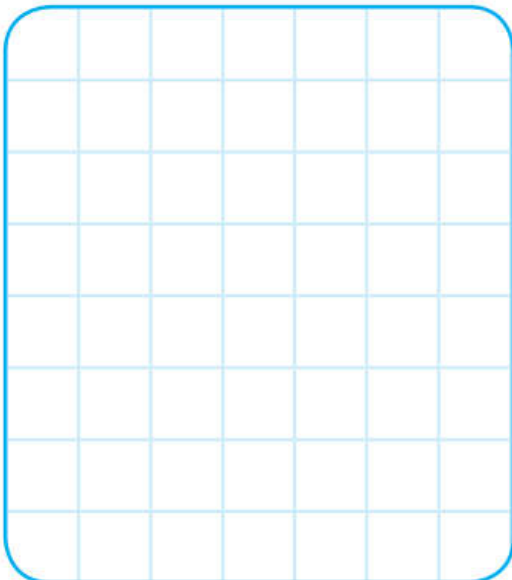
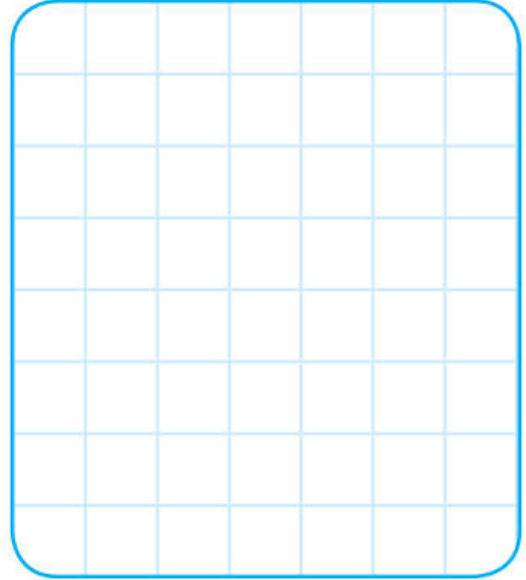
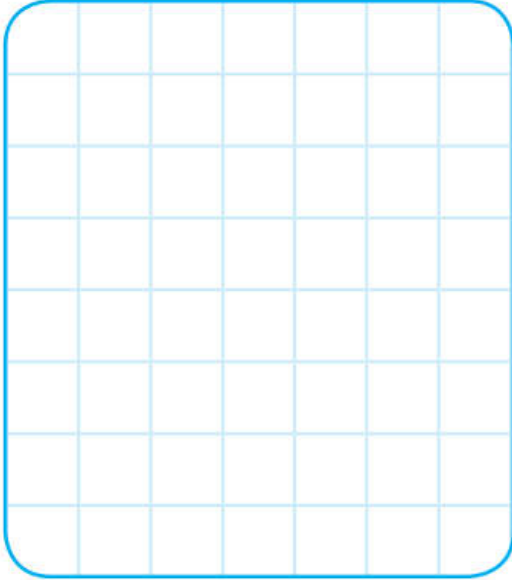
**Let's Try It** Solve the problems using the standard algorithm.

1.  $454 \div 3$

2.  $778 \div 2$

3.  $368 \div 3$

4.  $4,858 \div 4$



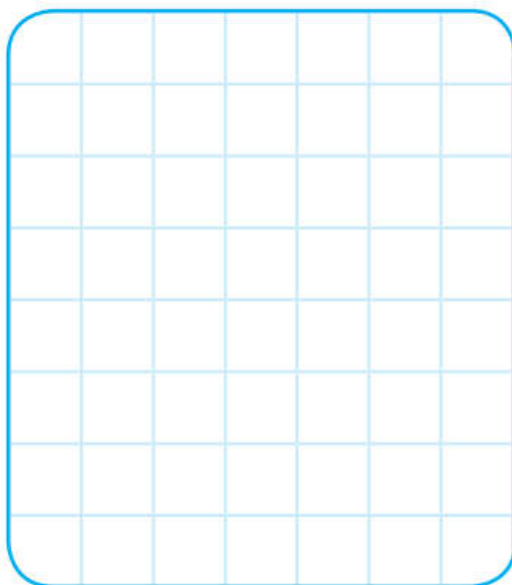
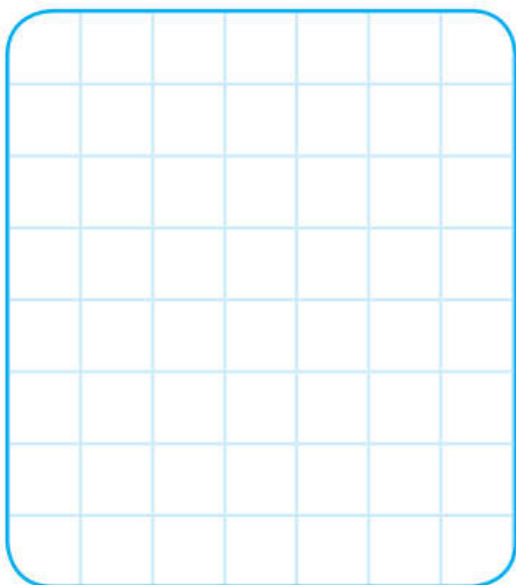
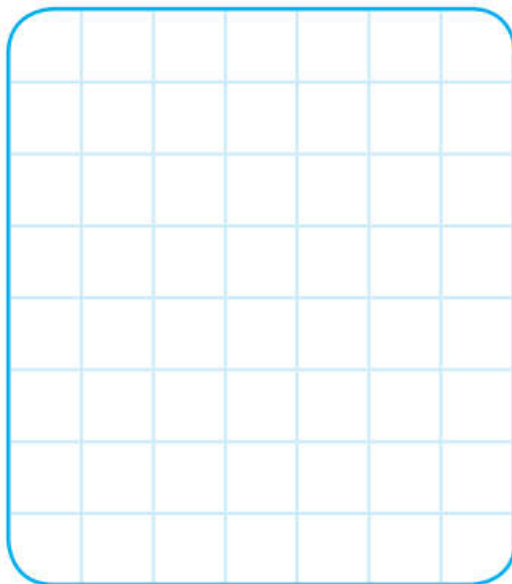
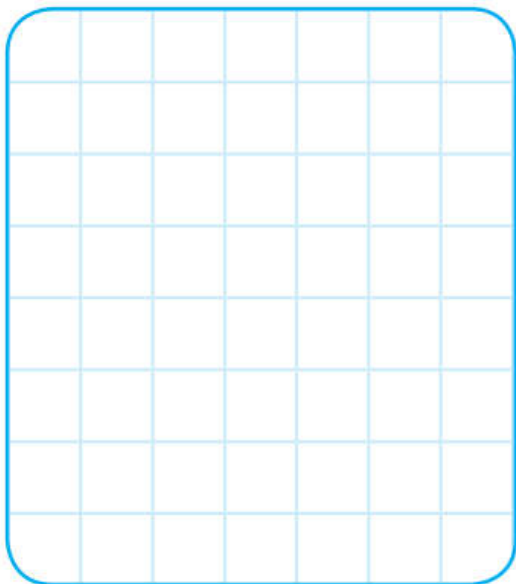
Solve using the standard division algorithm. Show your work.

1.  $240 \div 6 =$  \_\_\_\_\_

2.  $1,500 \div 5 =$  \_\_\_\_\_

3.  $414 \div 4 =$  \_\_\_\_\_

4.  $761 \div 6 =$  \_\_\_\_\_



Yahia placed 21 paints equally on 3 tables. How many paints were placed on each table?



Use counters to find the quotient and remainder.

1.  $10 \div 3$

\_\_\_\_\_

2.  $28 \div 5$

\_\_\_\_\_

3.  $15 \div 6$

\_\_\_\_\_

4.  $11 \div 3$

\_\_\_\_\_

5.  $29 \div 4$

\_\_\_\_\_

6.  $34 \div 5$

\_\_\_\_\_

7.  $25 \div 3$

\_\_\_\_\_

8.  $7 \overline{)20}$

\_\_\_\_\_



**Go DEEPER**

Alyson has 46 beads to make bracelets. Each bracelet has 5 beads. How many more beads does Alyson need so that all the beads she has are used? Explain.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**THINK SMARTER**

For 13a–13d, choose Yes or No to tell whether the division expression has a remainder.

13a.  $36 \div 9$  ☐ Yes ☐ No

13b.  $25 \div 3$  ☐ Yes ☐ No

13c.  $82 \div 9$  ☐ Yes ☐ No

13d.  $28 \div 7$  ☐ Yes ☐ No



Use basic facts and place value to find the quotient.

3.  $360 \div 6 =$  \_\_\_\_\_

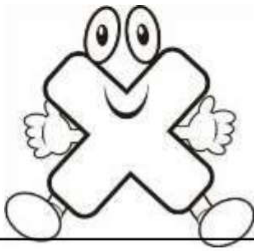
4.  $2,000 \div 5 =$  \_\_\_\_\_

5.  $4,500 \div 9 =$  \_\_\_\_\_





# Homework



## MULTIPLICATION

$1 \times 3 = \square$

$1 \times 5 = \square$

$1 \times 4 = \square$

$1 \times 6 = \square$

$1 \times 0 = \square$

$1 \times 7 = \square$

$1 \times 2 = \square$

$1 \times 1 = \square$

$1 \times 9 = \square$

$2 \times 6 = \square$

$2 \times 8 = \square$

$2 \times 5 = \square$

$2 \times 3 = \square$

$2 \times 1 = \square$

$2 \times 0 = \square$

$2 \times 4 = \square$

$2 \times 7 = \square$

$2 \times 2 = \square$

$1 \times 8 = \square$

$2 \times 5 = \square$

$2 \times 7 = \square$

$2 \times 4 = \square$

$1 \times 9 = \square$

$1 \times 6 = \square$

$2 \times 3 = \square$

$2 \times 1 = \square$

$1 \times 4 = \square$

$2 \times 2 = \square$

$2 \times 6 = \square$

$1 \times 7 = \square$

$1 \times 5 = \square$

$1 \times 3 = \square$

$2 \times 8 = \square$

$1 \times 2 = \square$

$1 \times 1 = \square$

$2 \times 9 = \square$



2.  $3200 \div 8 =$  \_\_\_\_\_

3.  $67 \div 3 =$  \_\_\_\_\_

4.  $455 \div 4 =$  \_\_\_\_\_



Use basic facts and place value to find the quotient.

6.  $560 \div 8 =$  \_\_\_\_\_

7.  $200 \div 5 =$  \_\_\_\_\_

8.  $240 \div 4 =$  \_\_\_\_\_

9.  $810 \div 9 =$  \_\_\_\_\_

10.  $6,400 \div 8 =$  \_\_\_\_\_

11.  $3,500 \div 7 =$  \_\_\_\_\_

12.  $5,000 \div 5 =$  \_\_\_\_\_

13.  $9,000 \div 3 =$  \_\_\_\_\_

14.  $3,000 \div 5 =$  \_\_\_\_\_



24. **THINK SMARTER** Which quotients are equal to 20? Mark all that apply.

Ⓐ  $600 \div 2$

Ⓓ  $140 \div 7$

Ⓑ  $1,200 \div 6$

Ⓔ  $500 \div 5$

Ⓒ  $180 \div 9$



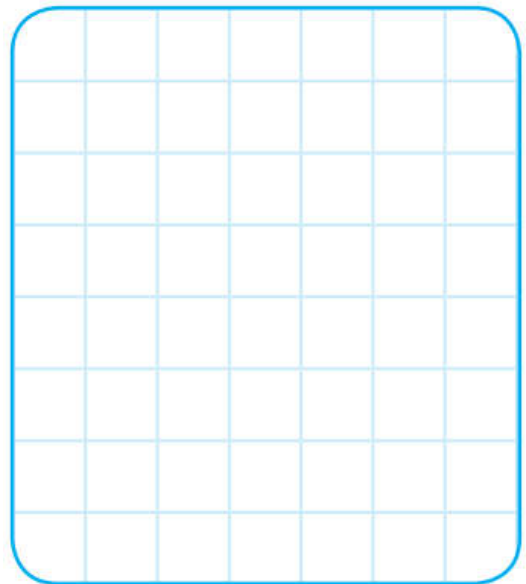
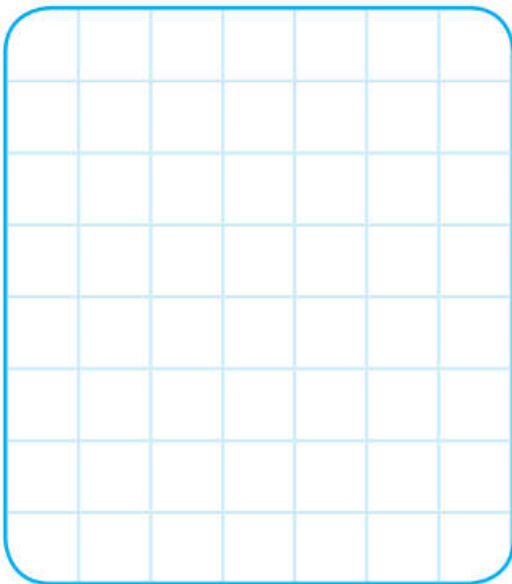
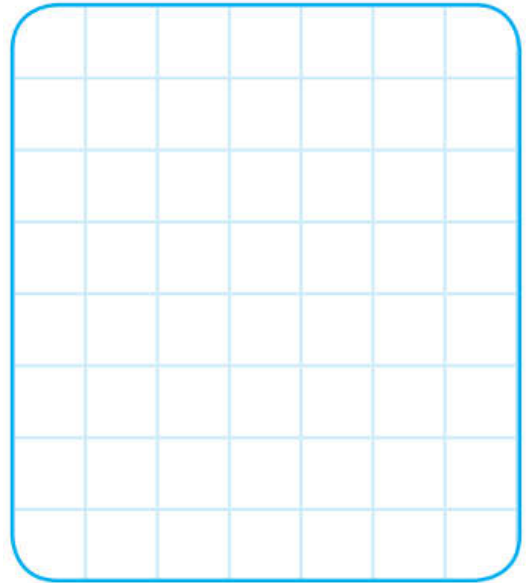
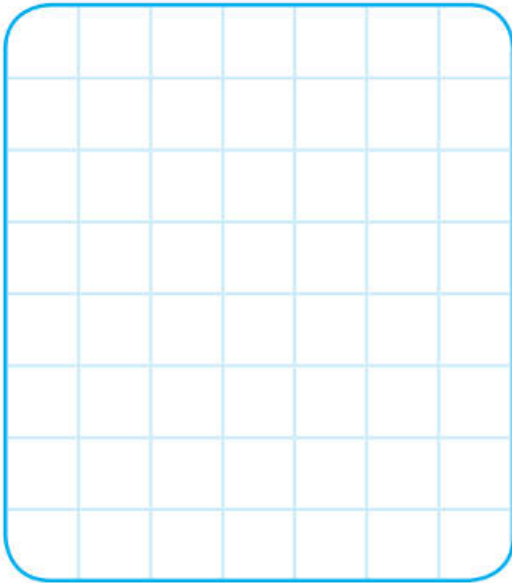
Solve the problems.

a.  $27 \div 5 =$  \_\_\_\_\_

b.  $156 \div 4 =$  \_\_\_\_\_

c.  $2,704 \div 3 =$  \_\_\_\_\_

d.  $583 \div 6 =$  \_\_\_\_\_





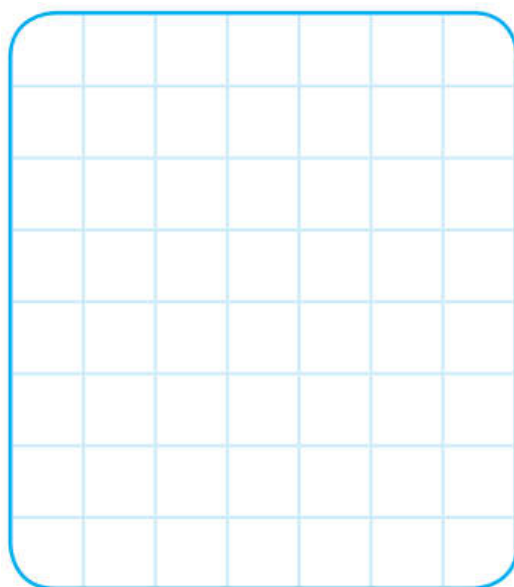
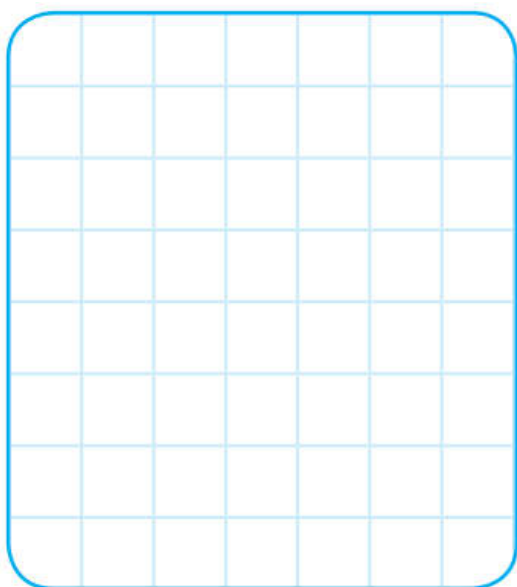
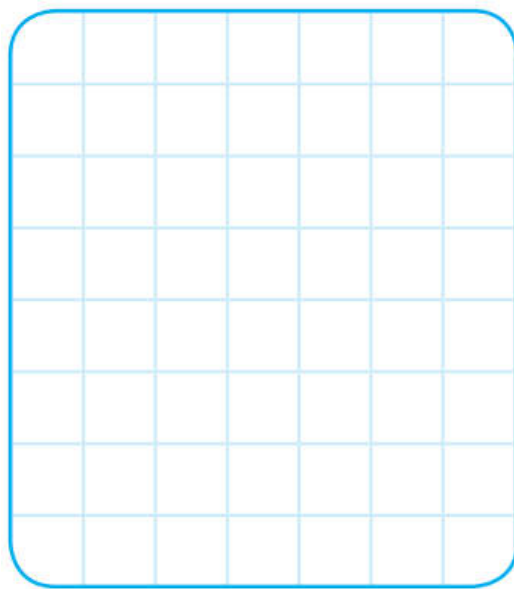
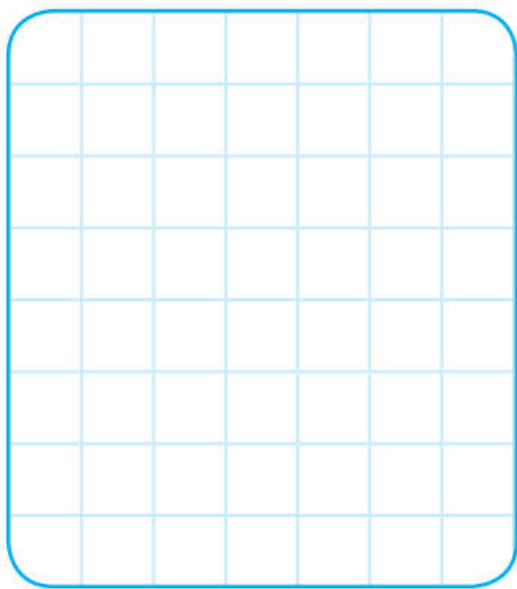
Divide. Use partial quotients.

4.  $9 \overline{)198}$

5.  $7 \overline{)259}$

6.  $8 \overline{)864}$

7.  $6 \overline{)738}$





UNIT

8

Theme 2 | Mathematical Operations and Algebraic Thinking

# Unit 8

## Order of Operations





# Order of Operations

## Parentheses

Multiplication and Division (left-to-right)

Addition and Subtraction (left-to-right)

# G

**Groupings**

( ) { } [ ]

# E

**Exponents**

$n^2$

# M

**Multiply/Divide**

Left to Right

$\div / \times$

# S

**Subtract/Add**

Left to Right

$+ -$

$$4 + 10 \div 2$$

$$4 + 5$$

$$4 + 5$$

$$9$$

$$12 - 8 \div 4 + 25 \times 3$$

$$12 - 2 + 75$$



1.

$$\text{Purple Rectangle} + \text{Purple Rectangle} + \text{Purple Rectangle} = 12$$

$$\text{Purple Rectangle} + \text{Purple Rectangle} + \text{Gray Triangle} = 18$$

$$\text{Orange Circle} + \text{Gray Triangle} + \text{Gray Triangle} = 26$$

$$\text{Gray Triangle} + \text{Orange Circle} \times \text{Purple Rectangle} = \underline{\hspace{2cm}}$$



2.

$$\text{Eye} + \text{Eye} + \text{Eye} = 18$$

$$\text{Eye} + \text{Ankh} + \text{Eye} = 23$$

$$\text{Ankh} + \text{Pyramid} + \text{Pyramid} = 17$$

$$2 \times \text{Pyramid} \times \text{Eye} + 2 \times \text{Ankh} = \underline{\hspace{2cm}}$$



$\begin{array}{l} 3 + 6 \div 3 \\ = 3 + 2 \\ = 5 \end{array}$	$\begin{array}{l} 9 \div 3 + 6 \\ = 3 + 6 \\ = 9 \end{array}$	$\begin{array}{l} 7 \times 2 + 4 \\ = 14 + 4 \\ = 18 \end{array}$	$\begin{array}{l} 5 + 3 \times 4 \\ = 5 + 12 \\ = 17 \end{array}$
$\begin{array}{l} 9 - 6 \div 2 \\ = 9 - 3 \\ = 6 \end{array}$	$\begin{array}{l} 8 \div 4 - 2 \\ = 2 - 2 \\ = 0 \end{array}$	$\begin{array}{l} 5 \times 3 - 7 \\ = 15 - 7 \\ = 8 \end{array}$	$\begin{array}{l} 9 - 4 \times 2 \\ = 9 - 8 \\ = 1 \end{array}$



Follow the standard order of operations to solve.

1.  $8 \times 2 + 13 = \underline{\hspace{2cm}}$
2.  $5 \times 6 - 12 = \underline{\hspace{2cm}}$
3.  $200 - 80 \times 2 = \underline{\hspace{2cm}}$
4.  $5 + 8 \div 2 = \underline{\hspace{2cm}}$
5.  $20 \div 5 + 5 = \underline{\hspace{2cm}}$



**Which Does Not Belong?** Solve the problems. Then, think about which problem does not belong in the set. Highlight or circle the problem you think does not belong and explain your thinking.

1.  $6 \times 4 - 4 = \underline{\hspace{2cm}}$
2.  $100 - 80 \times 1 = \underline{\hspace{2cm}}$
3.  $60 + 20 - 50 = \underline{\hspace{2cm}}$
4.  $2,356 - 2,336 = \underline{\hspace{2cm}}$



Solve the problems. Show your work.












1.  $18 \times 2 + 8 - 3 =$  \_\_\_\_\_

2.  $73 - 60 + 15 \div 3 =$  \_\_\_\_\_

3.  $4 + 4 + 5 \times 10 =$  \_\_\_\_\_

4.  $80 \div 8 - 7 =$  \_\_\_\_\_



	+		+		=	24
	+				=	12
	+		+		=	12
	+		$\div$		=	.....





$$8 \times 5 + 7 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$4 \times 8 - 5 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$7 + 2 \times 9 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$12 - 3 \times 3 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$7 + 8 \div 2 = \dots\dots\dots$$
$$= \dots\dots\dots$$

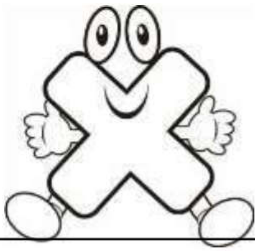
$$48 \div 8 + 5 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$36 \div 9 - 3 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$12 - 10 \div 2 = \dots\dots\dots$$
$$= \dots\dots\dots$$



# Homework



## MULTIPLICATION

$3 \times 3 = \square$

$3 \times 5 = \square$

$3 \times 4 = \square$

$3 \times 6 = \square$

$3 \times 0 = \square$

$3 \times 7 = \square$

$3 \times 2 = \square$

$3 \times 1 = \square$

$3 \times 9 = \square$

$2 \times 7 = \square$

$2 \times 3 = \square$

$2 \times 4 = \square$

$2 \times 8 = \square$

$2 \times 2 = \square$

$2 \times 1 = \square$

$2 \times 5 = \square$

$2 \times 6 = \square$

$2 \times 0 = \square$

$2 \times 8 = \square$

$3 \times 5 = \square$

$2 \times 7 = \square$

$2 \times 4 = \square$

$2 \times 9 = \square$

$3 \times 6 = \square$

$3 \times 3 = \square$

$3 \times 1 = \square$

$3 \times 4 = \square$

$2 \times 2 = \square$

$2 \times 6 = \square$

$3 \times 7 = \square$

$2 \times 5 = \square$

$2 \times 3 = \square$

$3 \times 8 = \square$

$3 \times 2 = \square$

$3 \times 1 = \square$

$3 \times 9 = \square$





$$\text{✈} + \text{✈} + \text{✈} = 27$$

$$\text{💻} + \text{💻} = 12$$

$$\text{📱} + \text{📱} = 6$$

$$\text{✈} + \text{💻} \div \text{📱} = \dots\dots\dots$$



$$\text{🏆} + \text{🏆} + \text{🏆} = 30$$

$$\text{✈} + \text{✈} = 14$$

$$\text{📱} + \text{📱} + \text{📱} = 9$$

$$\text{🏆} + \text{✈} - \text{📱} = \dots\dots\dots$$



$$\text{cat} + \text{cat} + \text{cat} = 15$$

$$\text{mouse} + \text{mouse} = 8$$

$$\text{scissors} + \text{scissors} = 6$$

$$\text{cat} + \text{mouse} \times \text{scissors} = \dots\dots\dots$$



$$\text{fox} + \text{fox} + \text{fox} = 21$$

$$\text{bird} + \text{bird} = 6$$

$$\text{calculator} + \text{calculator} + \text{calculator} = 9$$

$$\text{fox} + \text{bird} \times \text{calculator} = \dots\dots\dots$$



$$9 \times 4 + 14 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$4 \times 8 - 9 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$6 + 3 \times 2 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$25 - 3 \times 7 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$6 + 18 \div 3 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$63 \div 7 + 21 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$42 \div 7 - 5 = \dots\dots\dots$$
$$= \dots\dots\dots$$

$$15 - 14 \div 7 = \dots\dots\dots$$
$$= \dots\dots\dots$$





UNIT

9

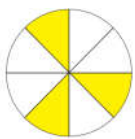
Theme 3 | Fractions, Decimals, and Proportional Relationships

# Unit 9 Fractions





# Concept (1): Composing and Decomposing Fractions



$$\frac{3}{8}$$

**Numerator (number of shaded parts)**

**Denominator (number of all parts)**


The figure	No. of equal parts	No. of shaded parts	Fraction form	Word form
	2	1	$\frac{1}{2}$	One Half
	3	1	$\frac{1}{3}$	One Third
	4	1	$\frac{1}{4}$	One Fourth
	5	1	$\frac{1}{5}$	One Fifth
	6	1	$\frac{1}{6}$	One Sixth
	7	1	$\frac{1}{7}$	One Seventh
	8	1	$\frac{1}{8}$	One eighth

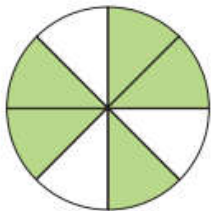




Complete the following table:

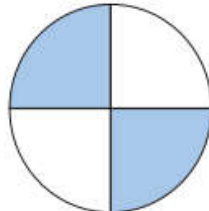
	Numerator	Denominator	The Fraction	Word form
①	1	2	$\frac{\dots}{\dots}$	.....
②	2	.....	$\frac{\dots}{7}$	.....
③	.....	3	$\frac{2}{\dots}$	.....
④	.....	.....	$\frac{5}{8}$	.....
⑤	.....	.....	$\frac{\dots}{\dots}$	Seven ninths

Write the fraction that represents the shaded part:



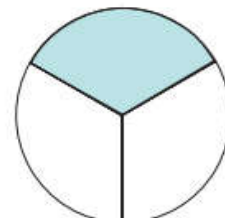
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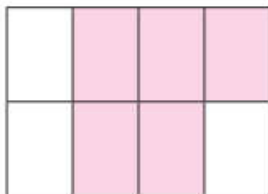
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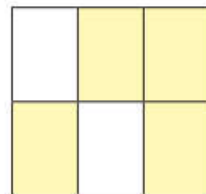
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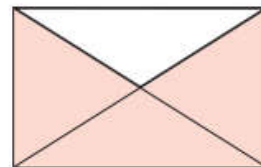
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**Complete:**

$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{\quad}{\quad}$$

$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{\quad}{\quad}$$

$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{\quad}{\quad}$$

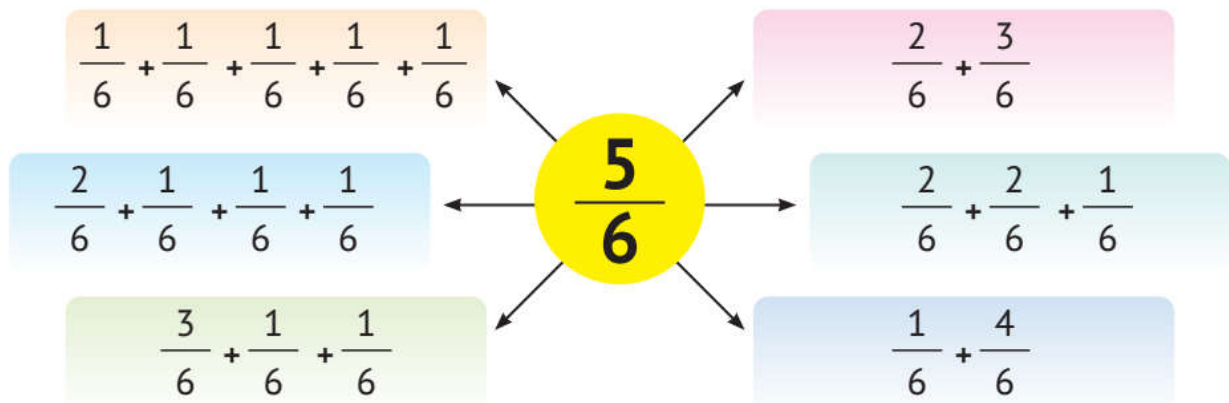
$$\frac{1}{4} + \frac{1}{4} = \frac{\quad}{\quad}$$



## Decomposing Fractions

$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$

$$\frac{5}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$



## Decompose the following fractions:

$$\frac{4}{5} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$$

$$\frac{3}{8} = \frac{\dots}{\dots}$$

$$\frac{2}{6} = \frac{\dots}{\dots}$$



## Decompose the following fractions in two different ways:

$$1 \quad \frac{3}{4} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$$

$$2 \quad \frac{3}{4} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$$

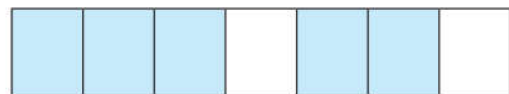
$$1 \quad \frac{4}{5} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$$

$$2 \quad \frac{4}{5} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$$

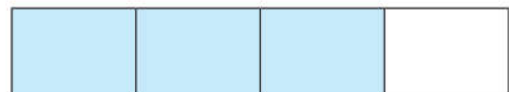


## Match:

$$\frac{1}{3} + \frac{1}{3}$$



$$\frac{3}{7} + \frac{2}{7}$$



$$\frac{1}{4} + \frac{2}{4}$$



**Proper fraction:**

Is just a fraction where its numerator is **less than** its denominator, such as:  $\frac{1}{5}$ ,  $\frac{2}{3}$ ,  $\frac{5}{7}$ ,  $\frac{10}{21}$ , ... etc.

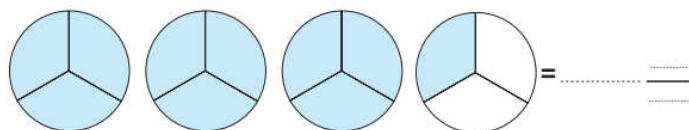
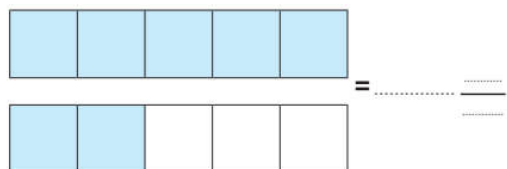
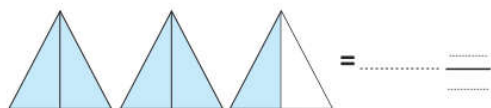
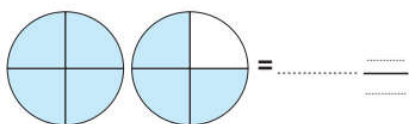
**Improper fraction:**

Is just a fraction where its numerator is **more than** or **equal to** its denominator, such as:  $\frac{7}{5}$ ,  $\frac{5}{3}$ ,  $\frac{7}{7}$ ,  $\frac{11}{2}$ , ... etc.

**Mixed number:**

Is a number consisting of a whole number and a proper fraction, such as:  $3\frac{1}{5}$ ,  $4\frac{2}{3}$ ,  $2\frac{5}{7}$ ,  $6\frac{11}{12}$ , ... etc.

**Write the mixed number that represents the figure:**



**Match:**

$\frac{5}{5}$  •

• **proper fraction** •

•  $\frac{9}{7}$

$3\frac{5}{8}$  •

• **improper fraction** •

•  $\frac{3}{13}$

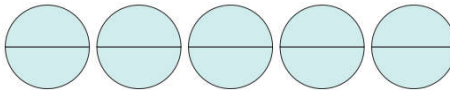
$\frac{5}{7}$  •

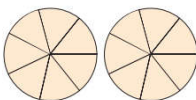
• **mixed number** •

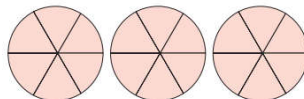
•  $2\frac{5}{7}$



## The fractional form of the whole number:

$$\frac{10}{2} = 5 \rightarrow 10 \div 2 = 5$$


$$\frac{14}{7} = 2 \rightarrow 14 \div 7 = 2$$


$$\frac{18}{6} = 3 \rightarrow 18 \div 6 = 3$$


### Complete:

1  $2 = \frac{\dots}{5} = \frac{4}{\dots} = \dots$

4  $4 = \frac{\dots}{2} = \frac{20}{\dots} = \dots$

7  $8 = \frac{\dots}{2} = \frac{40}{\dots} = \dots$

2  $1 = \frac{\dots}{5} = \frac{4}{\dots} = \dots$

5  $5 = \frac{\dots}{5} = \frac{15}{\dots} = \dots$

8  $9 = \frac{\dots}{3} = \frac{36}{\dots} = \dots$

3  $3 = \frac{\dots}{5} = \frac{12}{\dots} = \dots$

6  $6 = \frac{\dots}{3} = \frac{24}{\dots} = \dots$

9  $7 = \frac{\dots}{5} = \frac{21}{\dots} = \dots$



### Write each of the following as an improper fraction:

1  $3\frac{1}{2} = \dots$

4  $5\frac{1}{2} = \dots$

7  $5\frac{1}{4} = \dots$

2  $3\frac{2}{3} = \dots$

5  $2\frac{3}{5} = \dots$

8  $6\frac{2}{3} = \dots$

3  $2\frac{3}{4} = \dots$

6  $8\frac{1}{2} = \dots$

9  $4\frac{3}{10} = \dots$



### Write each of the following as a mixed number:

1  $\frac{5}{2} = \dots$

4  $\frac{9}{2} = \dots$

7  $\frac{15}{4} = \dots$

2  $\frac{7}{3} = \dots$

5  $\frac{13}{5} = \dots$

8  $\frac{22}{3} = \dots$

3  $\frac{9}{4} = \dots$

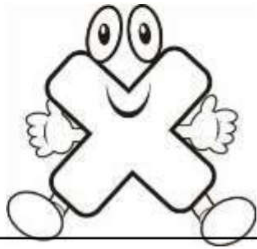
6  $\frac{17}{2} = \dots$

9  $\frac{31}{10} = \dots$





# Homework



## MULTIPLICATION

$4 \times 7 = \square$

$4 \times 3 = \square$

$4 \times 4 = \square$

$4 \times 8 = \square$

$4 \times 2 = \square$

$4 \times 1 = \square$

$4 \times 5 = \square$

$4 \times 6 = \square$

$4 \times 0 = \square$

$5 \times 3 = \square$

$5 \times 5 = \square$

$5 \times 4 = \square$

$5 \times 6 = \square$

$5 \times 0 = \square$

$5 \times 7 = \square$

$5 \times 2 = \square$

$5 \times 1 = \square$

$5 \times 9 = \square$

$4 \times 2 = \square$

$5 \times 6 = \square$

$5 \times 7 = \square$

$4 \times 5 = \square$

$4 \times 3 = \square$

$4 \times 8 = \square$

$5 \times 2 = \square$

$5 \times 1 = \square$

$5 \times 9 = \square$

$4 \times 8 = \square$

$5 \times 5 = \square$

$4 \times 7 = \square$

$4 \times 4 = \square$

$4 \times 9 = \square$

$4 \times 6 = \square$

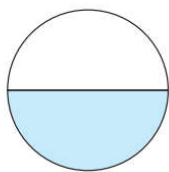
$5 \times 3 = \square$

$4 \times 1 = \square$

$5 \times 4 = \square$

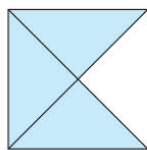


Write the fraction that represents the shaded part:



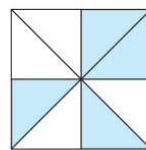
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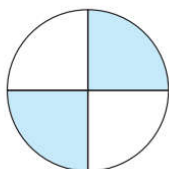
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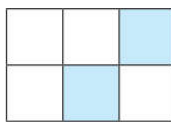
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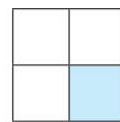
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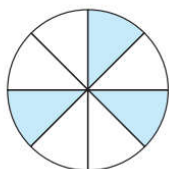
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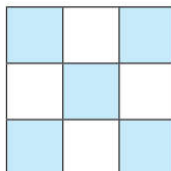
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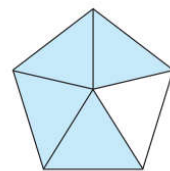
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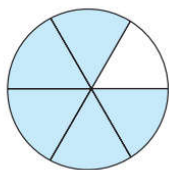
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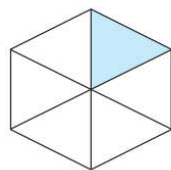
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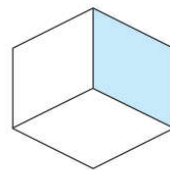
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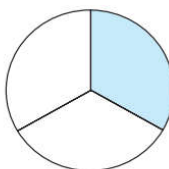
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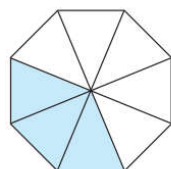
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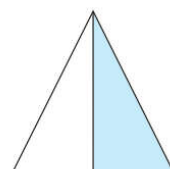
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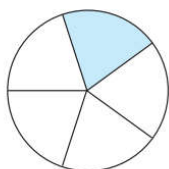
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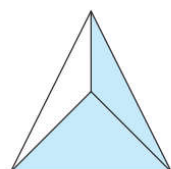
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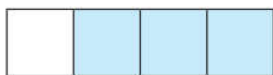


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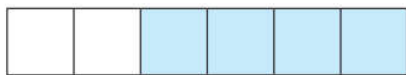
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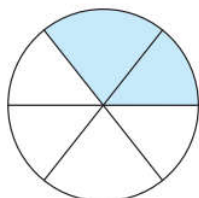
Write the fraction, then decompose it:



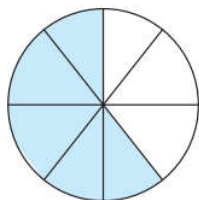
$$\frac{\dots\dots\dots}{\dots\dots\dots} = \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots}$$



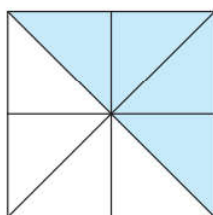
$$\frac{\dots\dots\dots}{\dots\dots\dots} = \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots}$$



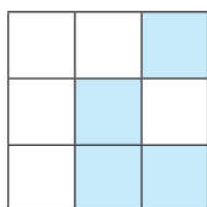
$$\frac{\dots\dots\dots}{\dots\dots\dots} = \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots}$$



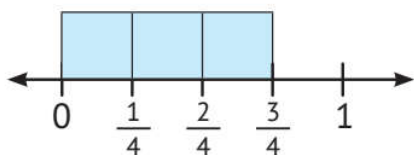
$$\frac{\dots\dots\dots}{\dots\dots\dots} = \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots}$$



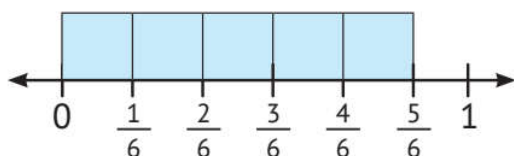
$$\frac{\dots\dots\dots}{\dots\dots\dots} = \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots}$$



$$\frac{\dots\dots\dots}{\dots\dots\dots} = \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots}$$



$$\frac{\dots\dots\dots}{\dots\dots\dots} = \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots}$$



$$\frac{\dots\dots\dots}{\dots\dots\dots} = \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots} + \frac{\dots\dots\dots}{\dots\dots\dots}$$



## Decompose the following fractions:

$$\frac{2}{3} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$\frac{3}{4} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$\frac{2}{4} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$\frac{4}{5} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$\frac{3}{5} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$\frac{5}{6} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$\frac{4}{7} = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$1 = \frac{\quad}{\quad} + \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$1 = \frac{\quad}{\quad} + \frac{\quad}{\quad} + \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$1 = \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

$$1 = \frac{\quad}{\quad} + \frac{\quad}{\quad} + \frac{\quad}{\quad} + \frac{\quad}{\quad} + \frac{\quad}{\quad} + \frac{\quad}{\quad} + \frac{\quad}{\quad}$$





Decompose the following fractions in two different ways:

1  $\frac{5}{7} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$

2  $\frac{5}{7} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$

1  $\frac{5}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$

2  $\frac{5}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$

1  $\frac{6}{9} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$

2  $\frac{6}{9} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$

1  $\frac{6}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$

2  $\frac{6}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$

1  $\frac{7}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$

2  $\frac{7}{8} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$

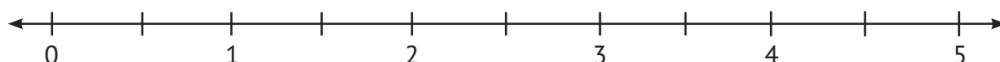
1  $\frac{8}{9} = \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots} + \frac{\dots}{\dots}$

2  $\frac{8}{9} = \frac{\dots}{\dots} + \frac{\dots}{\dots}$



Put each fraction in its suitable place on the number line:

a)  $4\frac{1}{2}$  ,  $1\frac{1}{2}$  ,  $\frac{8}{2}$  ,  $3\frac{1}{2}$  ,  $2\frac{1}{2}$



b)  $4\frac{1}{3}$  ,  $1\frac{2}{3}$  ,  $2\frac{2}{3}$  ,  $3\frac{1}{3}$  ,  $\frac{2}{3}$



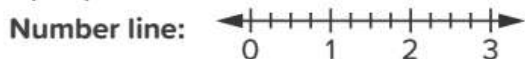
c)  $\frac{15}{5}$  ,  $1\frac{3}{5}$  ,  $2\frac{4}{5}$  ,  $1\frac{1}{5}$  ,  $\frac{3}{5}$



## Adding & Subtracting Mixed Numbers

**Mixed Together** Add the mixed numbers. Solve each problem using a number line, a model, and an equation. For each model, color the first fraction one color and use a different color for the second fraction.

1.  $1\frac{1}{4} + \frac{3}{4}$



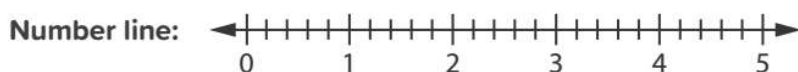
Model:



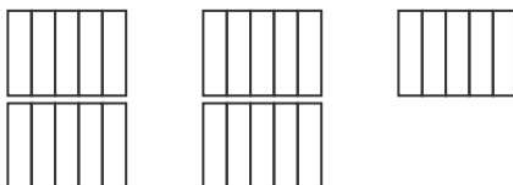
Equation: \_\_\_\_\_



2.  $2\frac{1}{5} + 1\frac{2}{5}$



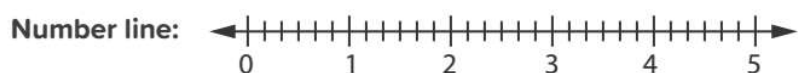
Model:



Equation: \_\_\_\_\_



3.  $2\frac{1}{6} + 1\frac{5}{6}$



Model:

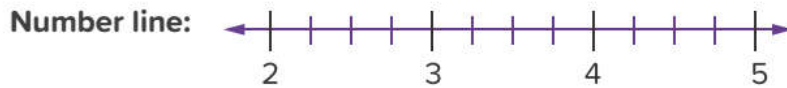


Equation: \_\_\_\_\_



**Mixed Apart** Subtract the mixed numbers. For each problem, solve it using a number line, a model, and an equation. For each model, color in the minuend one color and use a pencil to cross off the subtrahend.

1.  $4\frac{3}{4} - 2\frac{1}{4}$



Equation: \_\_\_\_\_



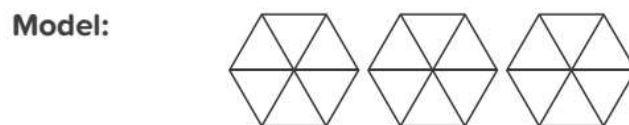
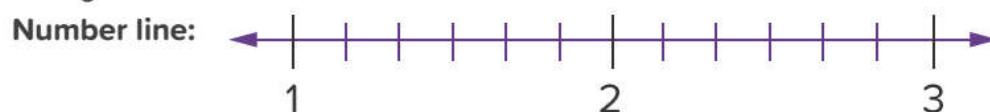
2.  $5 - 2\frac{1}{4}$



Equation: \_\_\_\_\_



3.  $3 - 1\frac{1}{6}$



Equation: \_\_\_\_\_



**Add:**

a)  $1\frac{1}{5} + 2\frac{2}{5} =$  .....

b)  $4\frac{3}{7} + 5\frac{4}{7} =$  .....

c)  $6\frac{3}{8} + 2\frac{5}{8} =$  .....

d)  $6\frac{3}{4} + 8\frac{3}{4} =$  .....

e)  $3\frac{5}{8} + 2\frac{7}{8} =$  .....

**Subtract:**

a)  $5 - 2\frac{1}{7} =$  .....

b)  $4\frac{3}{8} - 3\frac{1}{8} =$  .....

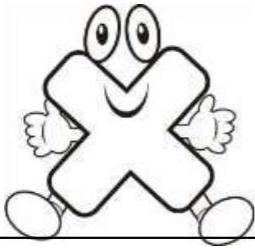
c)  $6\frac{3}{7} - 1\frac{2}{7} =$  .....

d)  $9\frac{3}{5} - 2\frac{4}{5} =$  .....

e)  $8\frac{2}{9} - 3\frac{5}{9} =$  .....



# Homework



## MULTIPLICATION

$5 \times 7 = \square$

$5 \times 3 = \square$

$5 \times 4 = \square$

$5 \times 8 = \square$

$5 \times 2 = \square$

$5 \times 1 = \square$

$5 \times 5 = \square$

$5 \times 6 = \square$

$5 \times 0 = \square$

$6 \times 3 = \square$

$6 \times 5 = \square$

$6 \times 4 = \square$

$6 \times 6 = \square$

$6 \times 0 = \square$

$6 \times 7 = \square$

$6 \times 2 = \square$

$6 \times 1 = \square$

$6 \times 9 = \square$

$5 \times 2 = \square$

$6 \times 6 = \square$

$6 \times 7 = \square$

$5 \times 5 = \square$

$5 \times 3 = \square$

$6 \times 8 = \square$

$5 \times 2 = \square$

$5 \times 1 = \square$

$6 \times 9 = \square$

$6 \times 8 = \square$

$5 \times 5 = \square$

$5 \times 7 = \square$

$6 \times 4 = \square$

$6 \times 9 = \square$

$5 \times 6 = \square$

$5 \times 3 = \square$

$6 \times 1 = \square$

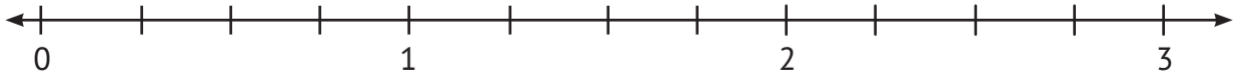
$6 \times 4 = \square$



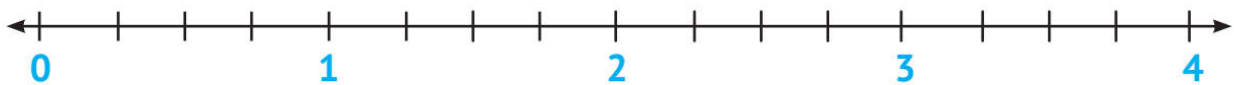


Put each fraction in its suitable place on the number line:

$$\frac{3}{4}, 2\frac{1}{4}, 1\frac{2}{4}, \frac{1}{4}, 2\frac{3}{4}$$

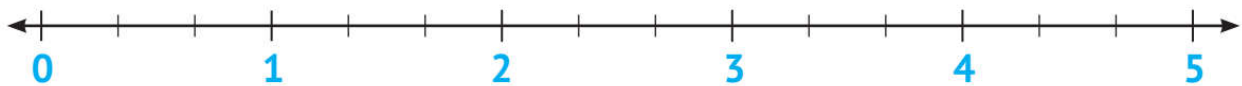


$$\frac{3}{4}, 1\frac{3}{4}, 2\frac{1}{4}, 3\frac{2}{4}$$



Add using the number line:

a)  $2\frac{1}{3} + 1\frac{1}{3} = \dots\dots\dots$



b)  $3\frac{3}{4} + \frac{3}{4} = \dots\dots\dots$



c)  $1\frac{2}{5} + 1\frac{4}{5} = \dots\dots\dots$



**Add:**

$$2 \frac{3}{4} + 5 = \dots\dots\dots$$

$$4 \frac{3}{5} + 2 \frac{1}{5} = \dots\dots\dots$$

$$2 \frac{3}{8} + 1 \frac{4}{8} = \dots\dots\dots$$

$$4 \frac{4}{5} + 3 \frac{1}{5} = \dots\dots\dots$$

$$2 \frac{6}{7} + \frac{1}{7} = \dots\dots\dots$$

$$3 \frac{5}{8} + 2 \frac{3}{8} = \dots\dots\dots$$

$$3 \frac{5}{6} + \frac{3}{6} = \dots\dots\dots$$

$$4 \frac{3}{7} + 2 \frac{6}{7} = \dots\dots\dots$$

$$3 \frac{5}{6} + 2 \frac{5}{6} = \dots\dots\dots$$

**Subtract:**

$$\text{a) } 5 \frac{6}{7} - 2 \frac{3}{7} = \dots\dots\dots$$

$$\text{e) } 4 \frac{3}{4} - 1 \frac{2}{4} = \dots\dots\dots$$

$$\text{b) } 9 - 1 \frac{3}{7} = \dots\dots\dots$$

$$\text{f) } 8 - 5 \frac{3}{8} = \dots\dots\dots$$

$$\text{c) } 5 \frac{1}{4} - 2 \frac{3}{4} = \dots\dots\dots$$

$$\text{g) } 6 \frac{3}{8} - 1 \frac{5}{8} = \dots\dots\dots$$

$$\text{d) } 9 \frac{1}{5} - 2 = \dots\dots\dots$$

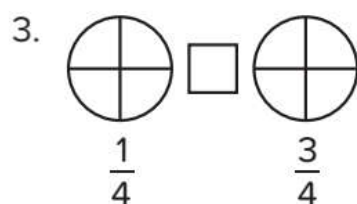
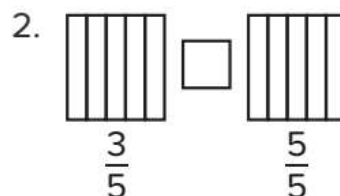
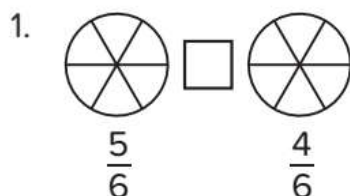
$$\text{h) } 6 \frac{5}{8} - 3 = \dots\dots\dots$$



## Concept (2): Comparing Fractions

### [1] Comparing fractions with like denominators:

**Comparing Fractions with Like Denominators** Shade each shape to show the given fractions. Then, compare the fractions using the symbols  $<$ ,  $>$ , or  $=$ .



4. Fill in the blanks to complete the statement.

If fractions have the same \_\_\_\_\_, then the one with the \_\_\_\_\_ numerator is the \_\_\_\_\_ fraction.

5. Order the following fractions from least to greatest.

$\frac{6}{8}$      $\frac{2}{8}$      $\frac{5}{8}$      $\frac{3}{8}$      $\frac{7}{8}$      $\frac{1}{8}$      $\frac{8}{8}$

\_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_

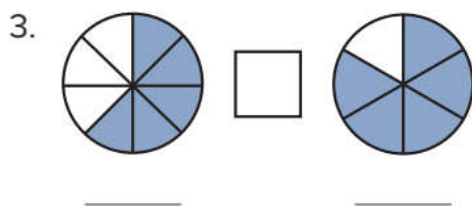
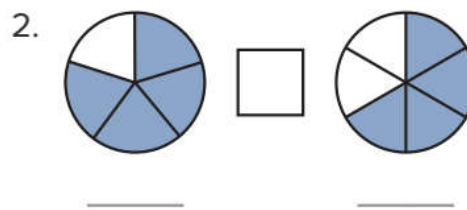
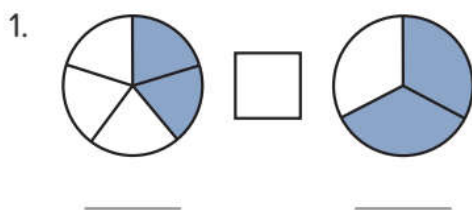


Put the suitable relation ( $<$ ), ( $>$ ) or ( $=$ ) in the blanks:



## [2] Comparing fractions with like numerators:

**Comparing Fractions with Like Numerators** Write the fractions shown underneath each shape, and then compare each pair of fractions using the symbols  $<$ ,  $>$ , or  $=$ .



4. Fill in the blanks to complete the statement.

If fractions have the same \_\_\_\_\_, then the one with the \_\_\_\_\_ denominator is the \_\_\_\_\_ fraction.

Write  $<$ ,  $>$ , or  $=$  in each box to compare the two fractions.

5.  $\frac{5}{6}$    $\frac{5}{8}$

6.  $\frac{3}{6}$    $\frac{3}{4}$

7.  $\frac{4}{8}$    $\frac{4}{5}$

8. Order the following fractions from least to greatest.

$\frac{3}{5}$     $\frac{3}{8}$     $\frac{3}{3}$     $\frac{3}{6}$     $\frac{3}{12}$

\_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_



## PRACTICE

Compare the fractions using greater than ( $>$ ) or less than ( $<$ ), and then order them from least to greatest.

1.  $\frac{4}{8} \square \frac{1}{8}$        $\frac{7}{8} \square \frac{3}{8}$        $\frac{2}{8} \square \frac{6}{8}$

\_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_

2.  $\frac{4}{1} \square \frac{4}{5}$        $\frac{4}{8} \square \frac{4}{4}$        $\frac{4}{9} \square \frac{4}{10}$

\_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_ ; \_\_\_\_\_

3. Hady and Hala were playing soccer. Hady made  $\frac{2}{3}$  of his shots. Hala made  $\frac{2}{4}$  of his shots. If they took the same number of shots, who made more shots?

Shorouk, Yahia, and Ziad each bought one bar of chocolate. On the way home, Shourouk ate  $\frac{2}{15}$  of hers, Yahia ate  $\frac{7}{15}$  of his, and Ziad ate  $\frac{4}{15}$  of his. The next day, Shourouk had another  $\frac{7}{15}$ , Yahia ate another  $\frac{8}{15}$  and Ziad ate another  $\frac{10}{15}$ .

4. How much chocolate did each person eat in all?

5. How much chocolate do they each have left?

6. Who has the most chocolate left?

7. Who has the least chocolate left?

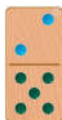




Put the suitable relation (<), (>) or (=) in the blanks:

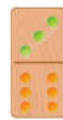
1.



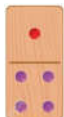


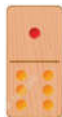
2.



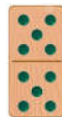


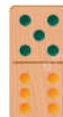
3.



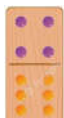


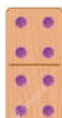
4.





5.





6.





**Benchmarks** A **benchmark** is a known size or amount that helps you understand a different size or amount. You can use  $\frac{1}{2}$  as a benchmark to help you compare fractions.



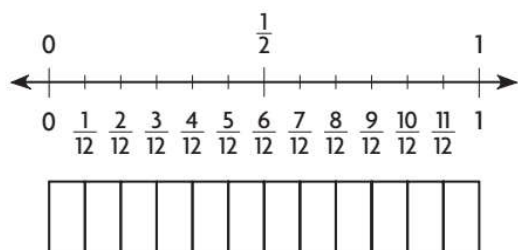
**Example** Use benchmarks to compare fractions.

A family hiked the same mountain trail. Evie and her father hiked  $\frac{5}{12}$  of the trail before they stopped for lunch. Jill and her mother hiked  $\frac{9}{10}$  of the trail before they stopped for lunch. Who hiked farther before lunch?

Compare  $\frac{5}{12}$  and  $\frac{9}{10}$  to the benchmark  $\frac{1}{2}$ .



**STEP 1** Compare  $\frac{5}{12}$  to  $\frac{1}{2}$ .



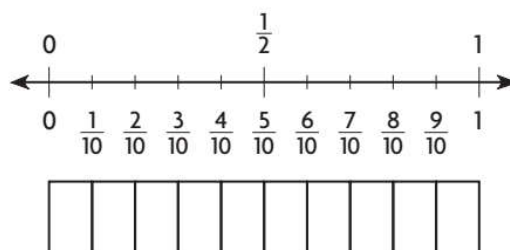
Think: Shade  $\frac{5}{12}$ .

$$\frac{5}{12} \bigcirc \frac{1}{2}$$

Since  $\frac{5}{12}$  is \_\_\_\_\_ than  $\frac{1}{2}$  and  $\frac{9}{10}$  is \_\_\_\_\_ than  $\frac{1}{2}$ , you know that  $\frac{5}{12} \bigcirc \frac{9}{10}$ .

So, \_\_\_\_\_ hiked farther before lunch.

**STEP 2** Compare  $\frac{9}{10}$  to  $\frac{1}{2}$ .

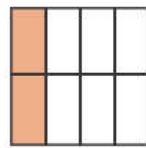
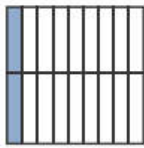


Think: Shade  $\frac{9}{10}$ .

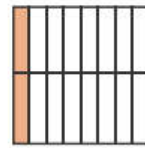
$$\frac{9}{10} \bigcirc \frac{1}{2}$$



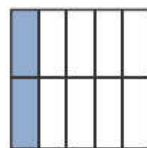
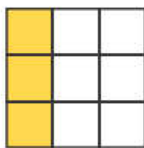
Circle the fraction that is equivalent.



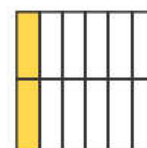
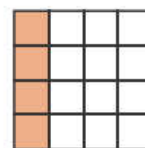
Circle the fraction that is equivalent.



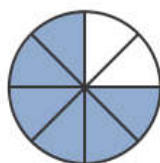
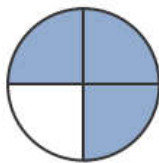
Circle the fraction that is equivalent.



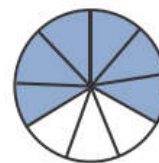
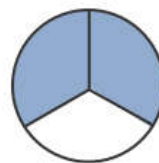
Circle the fraction that is equivalent.



Record the equivalent fraction in the second model.



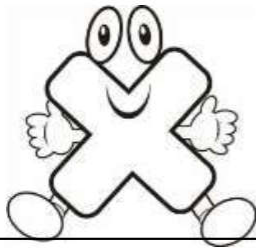
$$\frac{3}{4} = \frac{\quad}{8}$$



$$\frac{2}{3} = \frac{\quad}{9}$$



# Homework



## MULTIPLICATION

$7 \times 3 = \square$

$7 \times 5 = \square$

$7 \times 4 = \square$

$7 \times 6 = \square$

$7 \times 0 = \square$

$7 \times 7 = \square$

$7 \times 2 = \square$

$7 \times 1 = \square$

$7 \times 9 = \square$

$5 \times 7 = \square$

$5 \times 3 = \square$

$5 \times 4 = \square$

$5 \times 8 = \square$

$5 \times 2 = \square$

$5 \times 1 = \square$

$5 \times 5 = \square$

$5 \times 6 = \square$

$5 \times 0 = \square$

$5 \times 2 = \square$

$7 \times 6 = \square$

$7 \times 7 = \square$

$5 \times 5 = \square$

$5 \times 3 = \square$

$5 \times 8 = \square$

$7 \times 2 = \square$

$7 \times 1 = \square$

$7 \times 9 = \square$

$5 \times 8 = \square$

$7 \times 5 = \square$

$5 \times 7 = \square$

$5 \times 4 = \square$

$5 \times 9 = \square$

$5 \times 6 = \square$

$7 \times 3 = \square$

$5 \times 1 = \square$

$7 \times 4 = \square$



[1] Put the suitable relation (<), (>) or (=) in the blanks:

(1)  $\frac{1}{5}$    $\frac{4}{5}$

(5)  $\frac{3}{4}$    $\frac{1}{4}$

(2)  $\frac{9}{10}$    $\frac{3}{10}$

(6)  $\frac{5}{9}$    $\frac{4}{9}$

(3)  $2\frac{7}{9}$    $2\frac{5}{9}$

(7)  $2\frac{1}{8}$    $\frac{17}{8}$

(4)  $3\frac{2}{5}$    $\frac{7}{5}$

(8)  $\frac{3}{7}$    $\frac{4}{7}$



[2] Put the suitable relation (<), (>) or (=) in the blanks:

(1)  $\frac{3}{4}$    $\frac{3}{5}$

(4)  $\frac{1}{7}$    $\frac{1}{3}$

(2)  $\frac{2}{8}$    $\frac{2}{4}$

(5)  $\frac{8}{25}$    $\frac{8}{13}$

(3)  $2\frac{7}{9}$    $2\frac{7}{8}$

(6)  $2\frac{1}{2}$    $2\frac{1}{9}$



[3] Arrange each of the following numbers:

(1)  $\frac{2}{11}, \frac{7}{11}, \frac{4}{11}, \frac{10}{11}$

Ascending order: .....

(2)  $\frac{13}{7}, \frac{5}{7}, \frac{9}{7}, \frac{4}{7}, \frac{11}{7}$

Descending order: .....

(3)  $\frac{2}{10}, \frac{9}{10}, \frac{14}{10}, 0.5, \frac{7}{10}$

Ascending order: .....



(4)  $\frac{5}{9}, 1, \frac{2}{9}, \frac{7}{9}$

Descending order: .....



[4] Arrange each of the following numbers:

(1)  $\frac{7}{13}, \frac{7}{5}, \frac{7}{9}, \frac{7}{4}, \frac{7}{11}$

Ascending order: .....

(2)  $\frac{12}{5}, \frac{12}{7}, \frac{12}{17}, \frac{12}{13}, \frac{12}{15}$

Descending order: .....

(3)  $\frac{2}{5}, \frac{2}{3}, 1, \frac{2}{10}, \frac{2}{8}$

Descending order: .....



**Go DEEPER**

Angie, Blake, Carlos, and Daisy went running. Angie ran  $\frac{1}{3}$  mile, Blake ran  $\frac{3}{5}$  mile, Carlos ran  $\frac{7}{10}$  mile, and Daisy ran  $\frac{1}{2}$  mile. Which runner ran the shortest distance? Who ran the longest distance?

\_\_\_\_\_

**THINK SMARTER**

Elaine bought  $\frac{5}{8}$  pound of potato salad and  $\frac{4}{6}$  pound of macaroni salad for a picnic. Use the numbers to compare the amounts of potato salad and macaroni salad Elaine bought.

	<	

4

5

6

8






[5] Put the suitable relation (<), (>) or (=) in the blanks:

1.   

2.   

3.   

4.   

5.   

6.   

7.   

8.   

9.   

10.   



Tell whether the fractions are equivalent. Write = or ≠.

3.  $\frac{1}{6} \bigcirc \frac{2}{12}$

4.  $\frac{2}{5} \bigcirc \frac{6}{10}$

5.  $\frac{4}{12} \bigcirc \frac{1}{3}$

6.  $\frac{5}{8} \bigcirc \frac{2}{4}$

7.  $\frac{5}{6} \bigcirc \frac{10}{12}$

8.  $\frac{1}{2} \bigcirc \frac{5}{10}$



**THINK SMARTER**

For numbers 12a–12d, tell whether the fractions are equivalent by selecting the correct symbol.

12a.  $\frac{3}{15} \begin{matrix} = \\ \neq \end{matrix} \frac{1}{6}$

12b.  $\frac{3}{4} \begin{matrix} = \\ \neq \end{matrix} \frac{16}{20}$

12c.  $\frac{2}{3} \begin{matrix} = \\ \neq \end{matrix} \frac{8}{12}$

12d.  $\frac{8}{10} \begin{matrix} = \\ \neq \end{matrix} \frac{4}{5}$



## Concept (3)

# Multiplication and Fractions

**Identity Property Review** Solve each problem. Then, circle the problems that show the Identity Property of Multiplication.

1.  $45 \times 1 =$  \_\_\_\_\_

2.  $1 \times 34,953 =$  \_\_\_\_\_

3.  $\frac{2}{3} \times 1 =$  \_\_\_\_\_

4.  $0 \times 4 =$  \_\_\_\_\_

5.  $1 \times \frac{4}{5} =$  \_\_\_\_\_

6.  $\frac{1}{1} \times \frac{1}{8} =$  \_\_\_\_\_

7.  $\frac{3}{7} \times \frac{4}{4} =$  \_\_\_\_\_

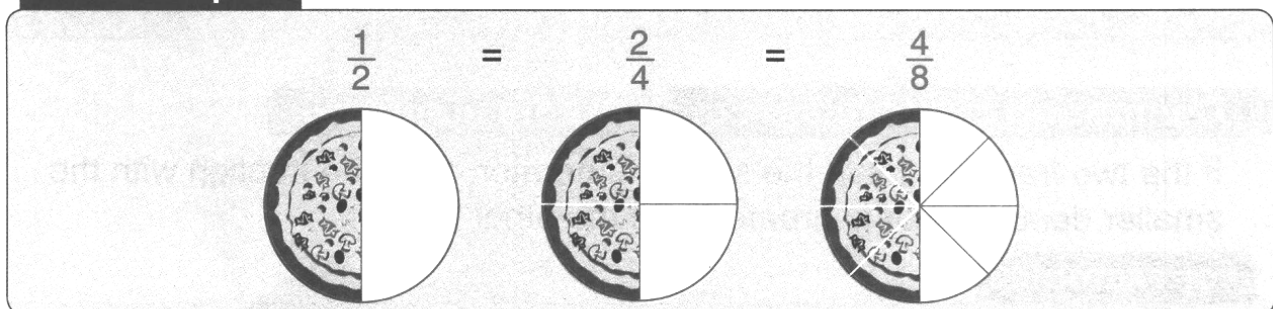
8.  $\frac{5}{6} \times 0 =$  \_\_\_\_\_



### Equivalent fractions

- Some fractions may look different, but are really the same.

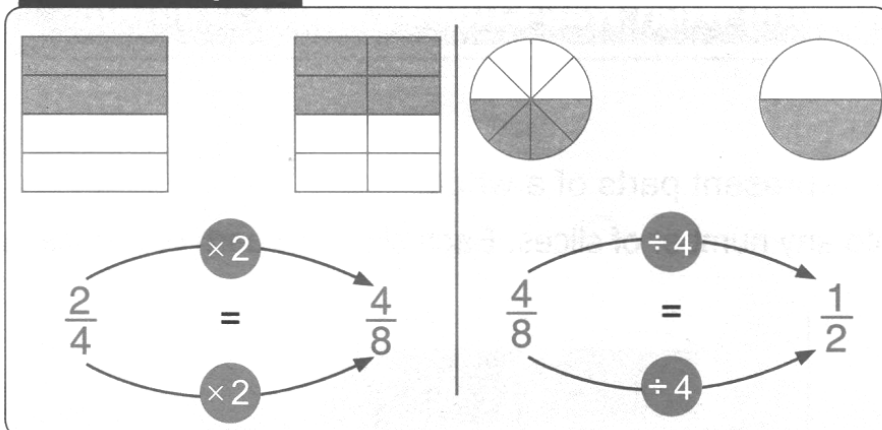
For example :



- To find equivalent fractions , multiply or divide both of the numerator and the denominator by the same number (other than zero).



For example :

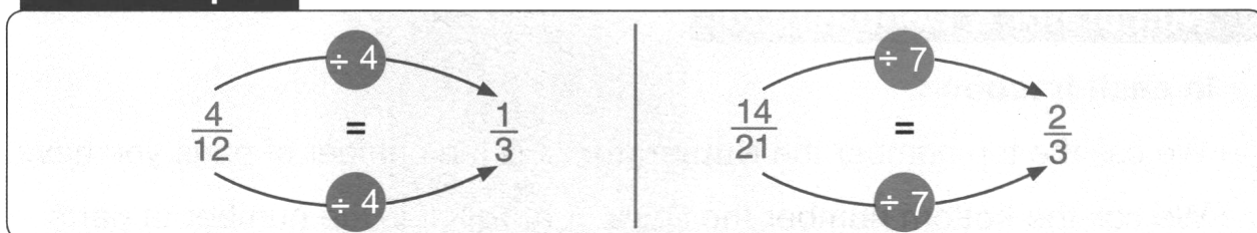
**Important :**

You only multiply or divide, never add or subtract, to get an equivalent fraction.

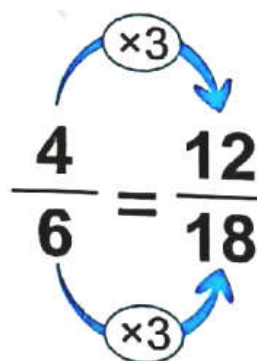
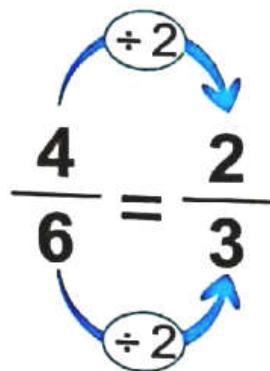
### Simplifying the fractions

To reduce (simplify) a fraction to its simplest form, we divide each of the numerator and the denominator by the greatest possible common number.

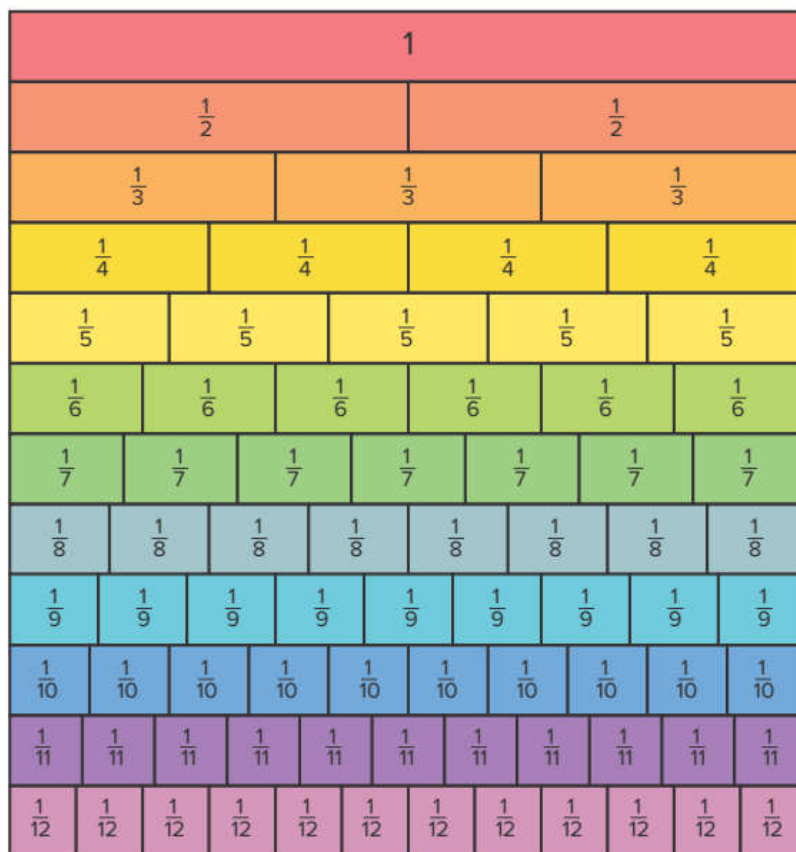
For example :



**Example:** Write two fractions equivalent to  $\frac{4}{6}$ .



**From Parts to a Whole** Use the fraction wall to answer the questions.



1. How many halves are in 1 whole? Using halves, how would you write 1 whole as a fraction?
2. How many fourths are in 1 whole? Using fourths, how would you write 1 whole as a fraction?
3. How many tenths are in 1 whole? Using tenths, how would you write 1 whole as a fraction?



**Multiplying to Create Equivalent Fractions** Follow your teacher's directions to solve the problems.

1. How many ways can you show 1 (one whole) as a fraction? Write as many as you can in the time allowed.

Generate at least 5 equivalent fractions for each fraction.

2.  $\frac{2}{3}$ ; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_

3. \_\_\_\_\_;  $\frac{2}{4}$ ; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_

4.  $\frac{3}{5}$ ; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_

5. \_\_\_\_\_; \_\_\_\_\_;  $\frac{3}{9}$ ; \_\_\_\_\_; \_\_\_\_\_; \_\_\_\_\_

**Dividing to Create Equivalent Fractions** Follow your teacher's directions to solve the problems.

1.  $\frac{15}{20}$  is equivalent to  $\frac{3}{4}$ . How can you use division to prove it?

Determine whether each fraction pair is equivalent. If it is, write "true." If it is not, write "false."

2.  $\frac{2}{3} = \frac{6}{9}$  \_\_\_\_\_

3.  $\frac{7}{8} = \frac{2}{3}$  \_\_\_\_\_

4.  $\frac{3}{5} = \frac{6}{8}$  \_\_\_\_\_

5.  $\frac{6}{10} = \frac{2}{5}$  \_\_\_\_\_

6.  $\frac{2}{8} = \frac{1}{4}$  \_\_\_\_\_

7.  $\frac{9}{12} = \frac{2}{4}$  \_\_\_\_\_

8.  $\frac{3}{8} = \frac{1}{6}$  \_\_\_\_\_

9.  $\frac{1}{3} = \frac{4}{12}$  \_\_\_\_\_





Look at the first fraction in each row. Circle the equivalent fractions. Cross out the ones that are not equivalent:

1	$\frac{1}{2}$	$\frac{3}{6}$	$\frac{6}{12}$	$\frac{4}{9}$	$\frac{6}{10}$	$\frac{4}{8}$	$\frac{7}{14}$	$\frac{6}{11}$
2	$\frac{2}{3}$	$\frac{1}{4}$	$\frac{8}{12}$	$\frac{4}{6}$	$\frac{5}{5}$	$\frac{6}{9}$	$\frac{7}{15}$	$\frac{4}{10}$
3	$\frac{3}{4}$	$\frac{9}{12}$	$\frac{2}{3}$	$\frac{15}{20}$	$\frac{4}{8}$	$\frac{6}{8}$	$\frac{12}{16}$	$\frac{9}{10}$
4	$\frac{4}{5}$	$\frac{8}{10}$	$\frac{12}{16}$	$\frac{14}{15}$	$\frac{16}{20}$	$\frac{4}{9}$	$\frac{12}{15}$	$\frac{20}{25}$



**What Is the Missing Multiple?** Work with a partner to identify the missing numerator or denominator for the equivalent fractions.

1.  $\frac{3}{4} = \frac{\square}{12}$

2.  $\frac{5}{15} = \frac{15}{\square}$

3.  $\frac{20}{25} = \frac{\square}{5}$

Find the missing numerator or denominator to make the fractions equivalent. Record what factor you multiplied or divided by. An example is shown.

$\frac{2}{5} = \frac{\quad}{20}$

Diagram showing multiplication by 4:  $2 \times 4 = 8$  and  $5 \times 4 = 20$ .

4.  $\frac{5}{7} = \frac{\square}{21}$

Diagram showing multiplication by 3:  $5 \times 3 = 15$  and  $7 \times 3 = 21$ .

5.  $\frac{2}{9} = \frac{10}{\square}$

Diagram showing multiplication by 5:  $2 \times 5 = 10$  and  $9 \times 5 = 45$ .



6.  $\frac{12}{18} = \frac{4}{\square}$

7.  $\frac{10}{70} = \frac{\square}{7}$

8.  $\frac{7}{13} = \frac{21}{\square}$

9. Heba had two cakes that were the same size. She cut the first cake into 6 pieces and frosted 2 of the pieces blue. She cut the second cake into 18 pieces. If she wanted to frost the same fraction of the second cake blue, how many pieces should she frost? How do you know? Draw a fraction model if necessary.



Different Kinds of Cookies

10. Nabil had 9 cookies.  $\frac{2}{3}$  of them were chocolate chip. How many cookies were chocolate chip? (Hint:  $\frac{2}{3} = \frac{?}{9}$ )



## ACCESS

### Doggy, Doggy, Where Is Your Bone?

Discuss the story problem that follows with your Shoulder Partner. Work together and use a bar model to solve the problem. Then, write an addition and a multiplication sentence.

Omar has 6 dogs. Each dog chews 2 bones a day. How many bones does Omar need each day to give his dogs?



Pack of Dogs

**Bar Model:**

--	--	--	--	--	--

**Addition sentence:** \_\_\_\_\_

**Multiplication sentence:** \_\_\_\_\_



- Two of Omar's dogs are at the vet. He has 6 bones in his bag for his evening dog walk. Shade the boxes to show how many bones Omar will give to the dogs that are with him.

--	--	--	--	--	--

- Represent your shaded bar model as a fraction.
- Decompose  $\frac{4}{6}$  as the sum of unit fractions.
- Express  $\frac{4}{6}$  using multiplication.



5. Draw a bar model and write an addition and multiplication sentence for  $\frac{2}{5}$ .

Bar model:

--	--	--	--	--

Addition sentence: \_\_\_\_\_

Multiplication sentence: \_\_\_\_\_



6. Draw a bar model and write an addition and multiplication sentence for  $\frac{5}{8}$ .

Bar model:

--	--	--	--	--	--	--	--

Addition sentence: \_\_\_\_\_

Multiplication sentence: \_\_\_\_\_



**Adding and Subtracting Fractions** Solve the problems. Show your work.

1.  $\frac{1}{5} + \frac{2}{5} + \frac{1}{5} =$  \_\_\_\_\_

2.  $\frac{3}{8} + \frac{1}{8} + \frac{3}{8} =$  \_\_\_\_\_

3.  $\frac{5}{12} + \frac{2}{12} + \frac{6}{12} =$  \_\_\_\_\_

4.  $\frac{6}{9} - \frac{5}{9} =$  \_\_\_\_\_

5.  $\frac{12}{15} - \frac{5}{15} =$  \_\_\_\_\_

6.  $1 - \frac{2}{5} =$  \_\_\_\_\_



Heba is making pancake batter. The recipe calls for  $\frac{5}{8}$  of a jug of milk, and she only has  $\frac{2}{8}$  of a jug of milk. How much more milk does Heba need to make the pancake batter?

What do I know? \_\_\_\_\_



Kareem runs to train for the big race. On Monday he runs  $\frac{4}{2}$  kilometer, on Wednesday he runs  $\frac{1}{2}$  kilometer, and on Friday he runs  $\frac{6}{2}$  kilometer. How many kilometers did Kareem run in all?

What do I know? \_\_\_\_\_



Samira and her family are celebrating her birthday with cake. They cut the cake into 8 equal slices. If Samira, her mom, her dad, and her brother each have 1 slice of the cake, what fraction of the cake is left?

What do I know? \_\_\_\_\_



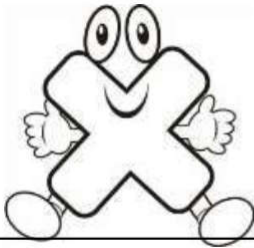
Over the course of a week, Adam drank  $1\frac{3}{4}$  liters of juice and Omar drank  $1\frac{7}{8}$  liters of juice. Who drank more?

What do I know? \_\_\_\_\_





# Homework



## MULTIPLICATION

$6 \times 7 = \square$

$6 \times 3 = \square$

$6 \times 4 = \square$

$6 \times 8 = \square$

$6 \times 2 = \square$

$6 \times 1 = \square$

$6 \times 5 = \square$

$6 \times 6 = \square$

$6 \times 0 = \square$

$7 \times 4 = \square$

$7 \times 3 = \square$

$7 \times 5 = \square$

$7 \times 7 = \square$

$7 \times 6 = \square$

$7 \times 0 = \square$

$7 \times 9 = \square$

$7 \times 2 = \square$

$7 \times 1 = \square$

$6 \times 8 = \square$

$7 \times 5 = \square$

$6 \times 7 = \square$

$6 \times 4 = \square$

$6 \times 9 = \square$

$6 \times 6 = \square$

$7 \times 3 = \square$

$6 \times 1 = \square$

$7 \times 4 = \square$

$6 \times 2 = \square$

$7 \times 6 = \square$

$7 \times 7 = \square$

$6 \times 5 = \square$

$6 \times 3 = \square$

$6 \times 8 = \square$

$7 \times 2 = \square$

$7 \times 1 = \square$

$7 \times 9 = \square$



Look at the first fraction in each row. Circle the equivalent fractions. Cross out the ones that are not equivalent:

1	$\frac{1}{6}$	$\frac{1}{4}$	$\frac{2}{10}$	$\frac{3}{18}$	$\frac{5}{30}$	$\frac{2}{12}$	$\frac{4}{24}$	$\frac{4}{12}$
2	$\frac{3}{7}$	$\frac{9}{21}$	$\frac{6}{14}$	$\frac{12}{28}$	$\frac{6}{12}$	$\frac{5}{21}$	$\frac{7}{14}$	$\frac{13}{35}$
3	$\frac{5}{8}$	$\frac{3}{10}$	$\frac{20}{32}$	$\frac{10}{16}$	$\frac{15}{20}$	$\frac{16}{24}$	$\frac{15}{24}$	$\frac{5}{9}$



Complete:

a  $\frac{1}{2} = \frac{5}{\dots\dots}$

c  $\frac{3}{5} = \frac{9}{\dots\dots}$

e  $\frac{16}{18} = \frac{\dots\dots}{9}$

g  $\frac{\dots\dots}{13} = \frac{4}{26}$

b  $\frac{5}{15} = \frac{\dots\dots}{3}$

d  $\frac{8}{9} = \frac{48}{\dots\dots}$

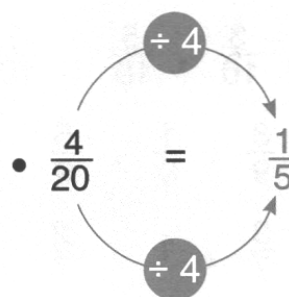
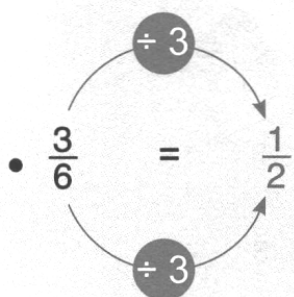
f  $\frac{5}{7} = \frac{30}{\dots\dots}$

h  $\frac{\dots\dots}{9} = \frac{32}{72}$



Simplify as the example:

Example :



a  $\frac{5}{10} = \frac{\dots\dots}{\dots\dots}$

b  $\frac{2}{6} = \frac{\dots\dots}{\dots\dots}$

c  $\frac{6}{12} = \frac{\dots\dots}{\dots\dots}$

d  $\frac{6}{9} = \frac{\dots\dots}{\dots\dots}$

e  $\frac{5}{20} = \frac{\dots\dots}{\dots\dots}$

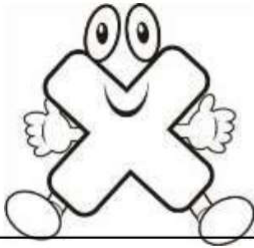
f  $\frac{6}{21} = \frac{\dots\dots}{\dots\dots}$



## Complete to get equivalent fractions:

$\frac{5}{8} = \frac{\dots}{\dots}$	$\frac{3}{18} = \frac{\dots}{\dots}$	$\frac{1}{9} = \frac{\dots}{\dots}$	$\frac{2}{6} = \frac{\dots}{\dots}$
$\frac{14}{35} = \frac{\dots}{\dots}$	$\frac{10}{15} = \frac{\dots}{\dots}$	$\frac{7}{9} = \frac{\dots}{\dots}$	$\frac{16}{32} = \frac{\dots}{\dots}$
$\frac{20}{30} = \frac{\dots}{\dots}$	$\frac{33}{44} = \frac{\dots}{\dots}$	$\frac{6}{12} = \frac{\dots}{\dots}$	$\frac{24}{40} = \frac{\dots}{\dots}$
$\frac{20}{45} = \frac{4}{\dots}$	$\frac{2}{7} = \frac{\dots}{35}$	$\frac{3}{8} = \frac{24}{\dots}$	$\frac{12}{24} = \frac{2}{\dots}$
$\frac{4}{9} = \frac{\dots}{18}$	$\frac{21}{35} = \frac{\dots}{5}$	$\frac{16}{20} = \frac{\dots}{10}$	$\frac{3}{4} = \frac{\dots}{32}$





## MULTIPLICATION

$4 \times 3 = \square$

$4 \times 5 = \square$

$4 \times 4 = \square$

$4 \times 6 = \square$

$4 \times 0 = \square$

$4 \times 7 = \square$

$4 \times 2 = \square$

$4 \times 1 = \square$

$4 \times 9 = \square$

$8 \times 7 = \square$

$8 \times 3 = \square$

$8 \times 4 = \square$

$8 \times 8 = \square$

$8 \times 2 = \square$

$8 \times 1 = \square$

$8 \times 5 = \square$

$8 \times 6 = \square$

$8 \times 0 = \square$

$8 \times 2 = \square$

$4 \times 6 = \square$

$4 \times 7 = \square$

$8 \times 5 = \square$

$8 \times 3 = \square$

$8 \times 8 = \square$

$4 \times 2 = \square$

$4 \times 1 = \square$

$4 \times 9 = \square$

$8 \times 8 = \square$

$4 \times 5 = \square$

$8 \times 7 = \square$

$8 \times 4 = \square$

$8 \times 9 = \square$

$8 \times 6 = \square$

$4 \times 3 = \square$

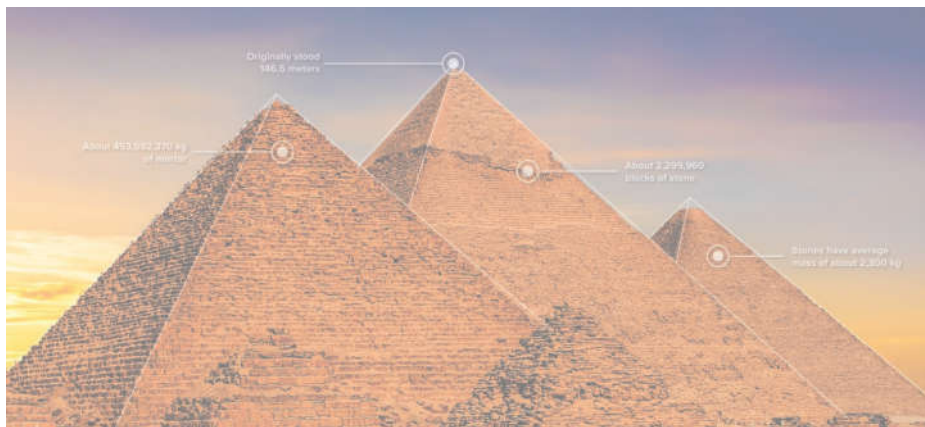
$8 \times 1 = \square$

$4 \times 4 = \square$



# MATHEMATICS PRIMARY FOUR SECOND TERM

Part (2)







UNIT

10

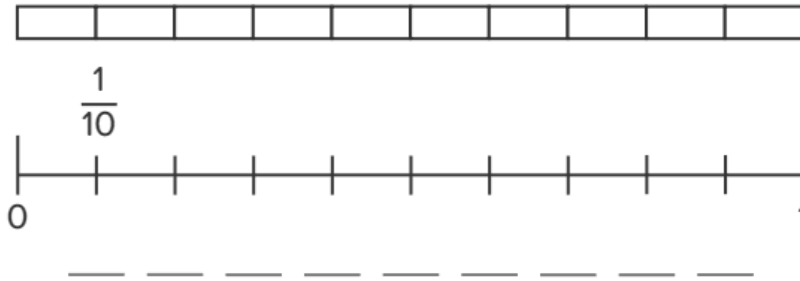
Theme 3 Fractions, Decimals, and Proportional Relationships

# Unit 10 Decimals

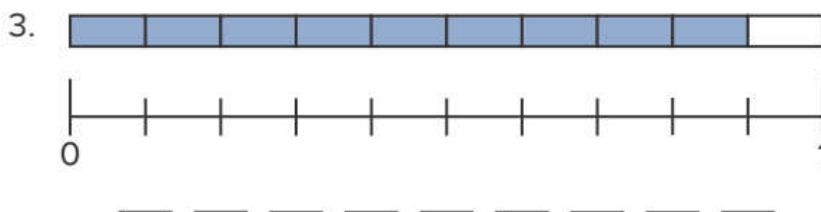
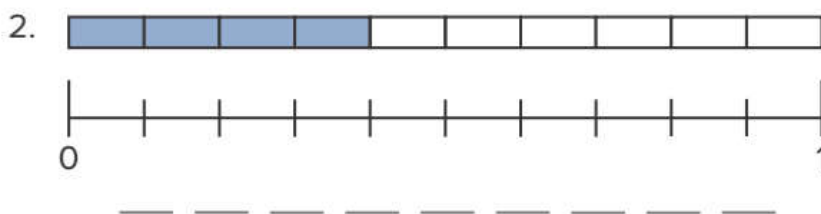
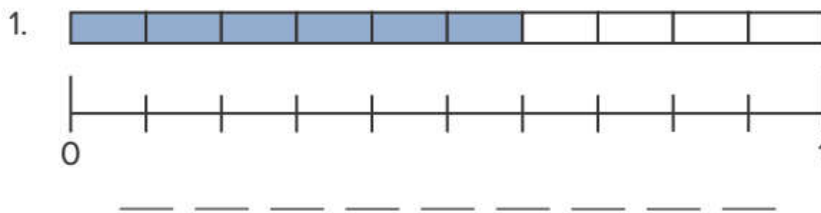


# Concept (1): Defining Decimals

**Break It Apart** Follow along with your teacher to fill in the fractions and decimals on the number line.



**Connect the Parts** Record what fraction and decimal are shown.





Shade in the model to represent the decimal.

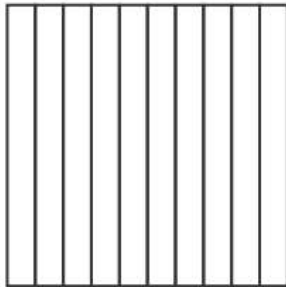
4. 0.7



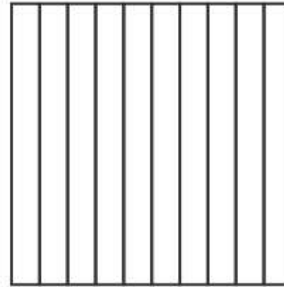
5. 0.5



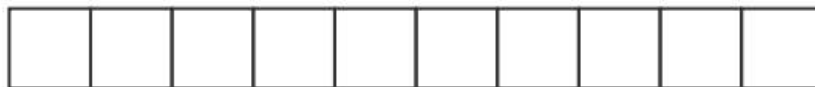
6. 0.6



7. 0.2



Hosam had a 1-meter piece of fabric. Of this piece, 0.2 meter had flowers on it, 0.6 meter was plain blue, and the rest had stars. Color in the strip of Hosam's fabric based on the description.

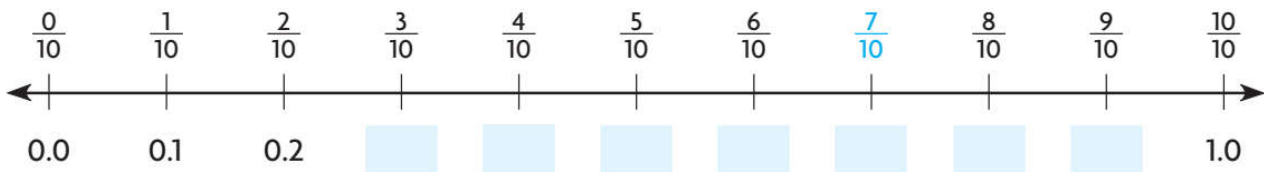


What decimal of Hosam's strip had stars? \_\_\_\_\_



**Use a number line.**

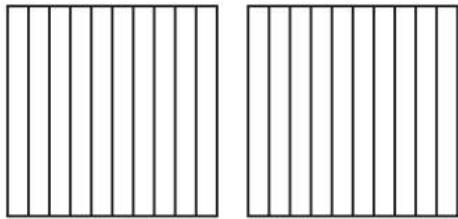
Label the number line with decimals that are equivalent to the fractions. Locate the point  $\frac{7}{10}$ .



\_\_\_\_\_ names the same amount as  $\frac{7}{10}$ .

**Use a model and a place-value chart.****Fraction**

Shade  $1\frac{6}{10}$  of the model.



Write: \_\_\_\_\_

Read: one and six tenths

**Decimal**

$1\frac{6}{10}$  is 1 whole and 6 tenths.

**Think:** Use the ones place to record wholes.

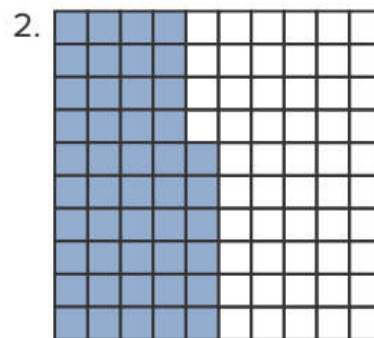
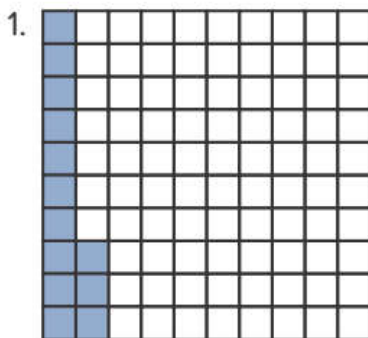
Ones	.	Tenths	Hundredths
	.		

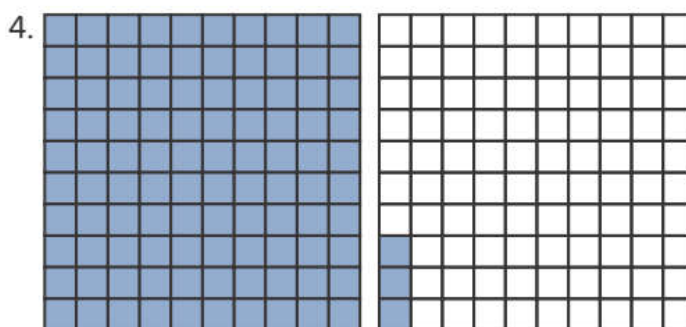
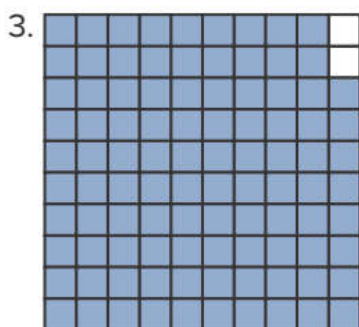
Write: \_\_\_\_\_

Read: \_\_\_\_\_

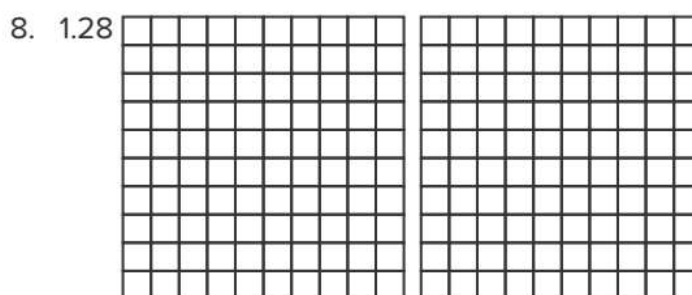
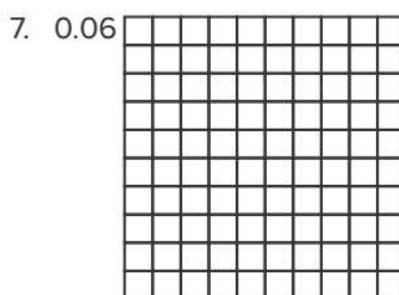
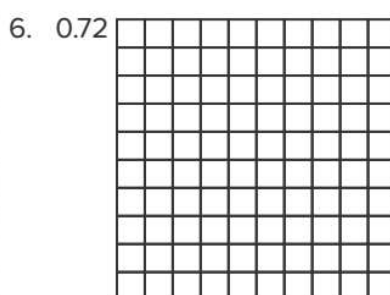
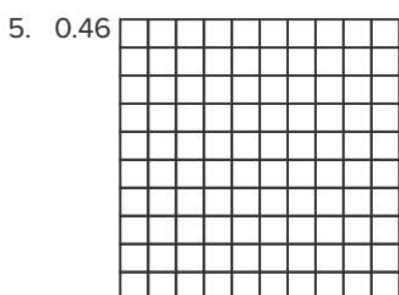


**More Cups of Rice** Record what decimal is shown.

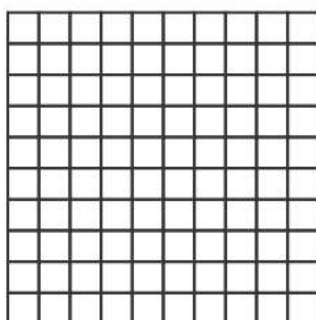




Shade in the grids to show the decimal stated.



9. Basem had a quilt that his mother bought for him. 0.35 of it was colored blue. 0.4 of it was red. The rest was yellow. Color in the quilt to match the decimals described.

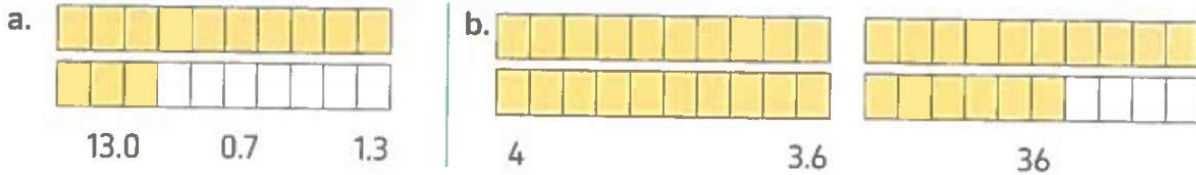


10. What decimal of Basem's quilt was yellow? \_\_\_\_\_





Circle the decimal that represent the shaded part.



**Writing About Math** Use the number to answer the questions: **532.89**

1. What is the value of the 3? \_\_\_\_\_
2. What digit is in the Hundredths place? \_\_\_\_\_
3. What is the value of the digit in the Hundreds place? \_\_\_\_\_
4. What digit is in the Tenths place? \_\_\_\_\_

Use the example in the chart to help you answer the following problems.

Standard Form	Word Form	Unit Form	Expanded Form
4.23	four and twenty-three hundredths	4 Ones, 2 Tenths, 3 Hundredths	$4 + 0.2 + 0.03$

Write the numbers in word form.

1. 4.53

\_\_\_\_\_

2. 0.48

\_\_\_\_\_

3.  $2 + 0.1 + 0.03$

\_\_\_\_\_



Write the numbers in unit form.

4. 4.52

---

5. seven and thirty-four hundredths

---

6. sixty-nine hundredths

---



Write the numbers in expanded form.

7. 2.04

---

8. two and fifty-Hundredths

---

9. 5 Ones, 6 Tenths, 8 Hundredths

---



Write the numbers in standard form.

10. 7 Ones, 9 Hundredths

---

11.  $5 + 0.5 + 0.01$

---

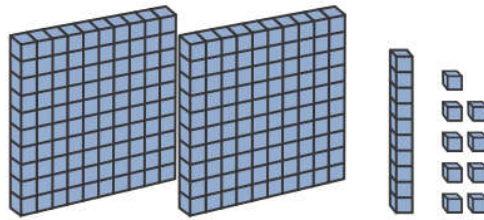
12. nine and forty-three Hundredths

---



Fill in the blanks to match the decimal models.

Example:

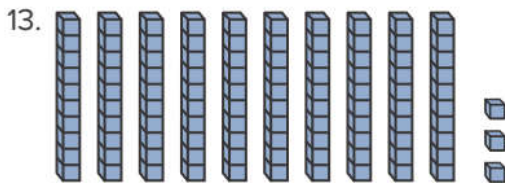


Standard form: 2.19

Word form: two and nineteen hundredths

Unit form: 2 Ones, 1 Tenth, 9 Hundredths

Expanded form:  $2 + 0.1 + 0.09$

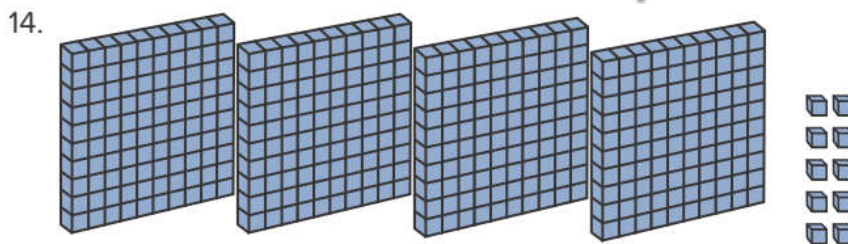


Standard form: \_\_\_\_\_

Word form: \_\_\_\_\_

Unit form: \_\_\_\_\_

Expanded form: \_\_\_\_\_



Standard form: \_\_\_\_\_

Word form: \_\_\_\_\_

Unit form: \_\_\_\_\_

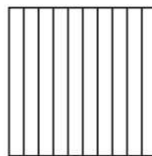
Expanded form: \_\_\_\_\_



# Homework

1. Write five tenths as a fraction and as a decimal.

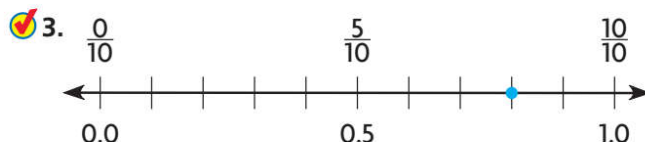
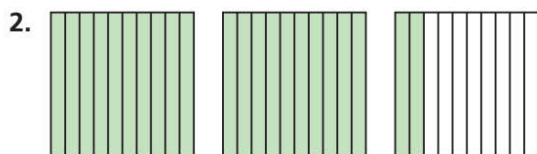
Fraction: \_\_\_\_\_ Decimal: \_\_\_\_\_



Ones	.	Tenths	Hundredths
	.		



Write the fraction or mixed number and the decimal shown by the model.

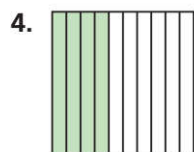


\_\_\_\_\_

\_\_\_\_\_

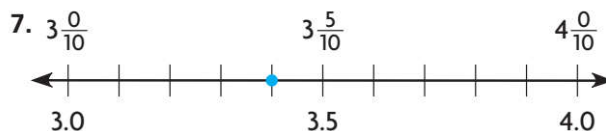
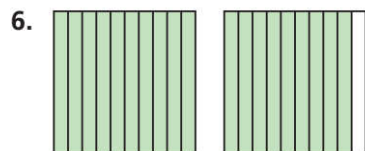


Write the fraction or mixed number and the decimal shown by the model.



\_\_\_\_\_

\_\_\_\_\_



\_\_\_\_\_

\_\_\_\_\_



**Practice: Copy and Solve** Write the fraction or mixed number as a decimal.

8.  $5\frac{9}{10}$

9.  $\frac{1}{10}$

10.  $\frac{7}{10}$

11.  $8\frac{9}{10}$

12.  $\frac{6}{10}$

13.  $6\frac{3}{10}$

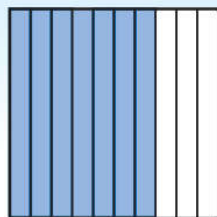
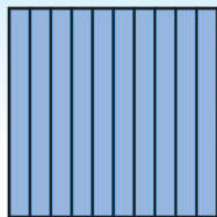
14.  $\frac{5}{10}$

15.  $9\frac{7}{10}$



**THINK SMARTER**

Select a number shown by the model. Mark all that apply.



$1\frac{7}{10}$

$\frac{70}{10}$

$1.7$

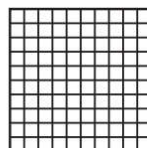
$7$

$0.7$

$\frac{17}{10}$

1. Shade the model to show  $\frac{31}{100}$ .

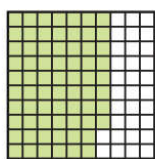
Write the amount as a decimal. \_\_\_\_\_



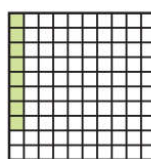
Ones	.	Tenths	Hundredths
	.		

Write the fraction or mixed number and the decimal shown by the model.

2.



3.



4.

$6\frac{0}{100}$

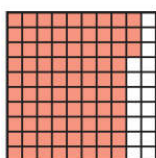
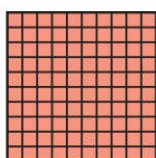
$6\frac{50}{100}$

$7\frac{0}{100}$

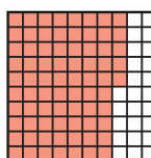


Write the fraction or mixed number and the decimal shown by the model.

5.



6.

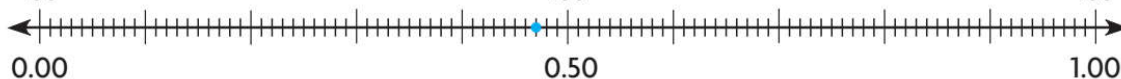


7.

$\frac{0}{100}$

$\frac{50}{100}$

$\frac{100}{100}$





**Practice: Copy and Solve** Write the fraction or mixed number as a decimal.

8.  $\frac{9}{100}$

9.  $4\frac{55}{100}$

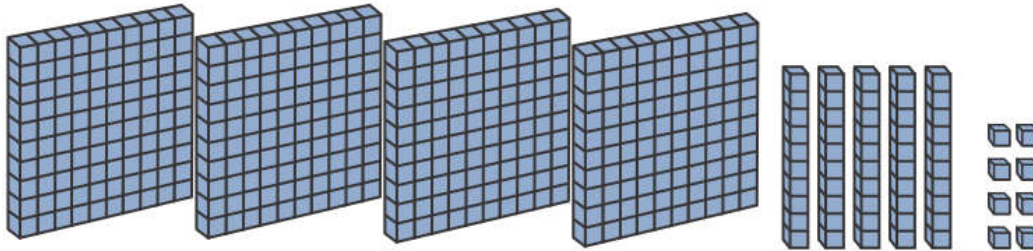
10.  $\frac{10}{100}$

11.  $9\frac{33}{100}$

12.  $\frac{92}{100}$

13.  $14\frac{16}{100}$

15.



Standard form: \_\_\_\_\_

Word form: \_\_\_\_\_

Unit form: \_\_\_\_\_

Expanded form: \_\_\_\_\_

Join each decimal to its representing shape.

a.



b.



c.



d.



e.



0.8

0.7

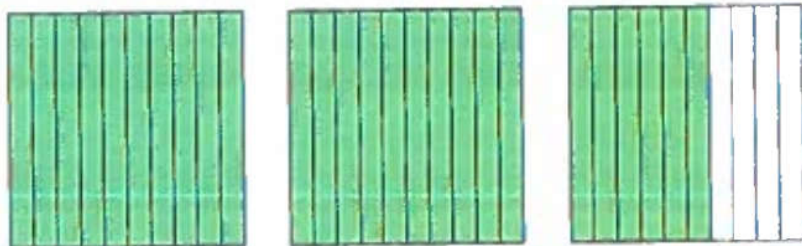
0.1

0.2

0.5



## Concept (2): Decimals and Fractions



Mixed Number :  $2\frac{6}{10}$

Decimal : 2.6

Word form : Two and six tenths.



Write the fraction for each of the following decimals.

a. 0.4

b. 0.13

c. 0.07

d. 2.93

**Solution**

a.  $\frac{4}{10}$

b.  $\frac{13}{100}$

c.  $\frac{7}{100}$

d.  $2\frac{93}{100}$

Write the fraction form for each of the following decimals.

a. 0.9 \_\_\_\_\_

b. 2.7 \_\_\_\_\_

c. 3.74 \_\_\_\_\_

d. 7.05 \_\_\_\_\_

Express the decimals as fractions.

a. 7.6 = \_\_\_\_\_

b. 3.4 = \_\_\_\_\_

c. 10.05 = \_\_\_\_\_

d. 2.02 = \_\_\_\_\_

e. 2.20 = \_\_\_\_\_

f. 5.97 = \_\_\_\_\_

g. 4.79 = \_\_\_\_\_

h. 6.28 = \_\_\_\_\_

i. 3.27 = \_\_\_\_\_



**Decompose the units to represent each number as Tenth and then write the number as a fraction:**

a. 3

Tenths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

b. 1

Tenths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

c. 4

Tenths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

d. 1.3

Tenths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

e. 1.5

Tenths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

f. 2.3

Tenths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

g. 5.1

Tenths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

h. 17.4

Tenths : \_\_\_\_\_

In fraction form : \_\_\_\_\_



**Decompose the units to represent each number as Hundredth and then write the number as a fraction:**

a. 1

Hundredths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

b. 3

Hundredths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

c. 5

Hundredths : \_\_\_\_\_

In fraction form : \_\_\_\_\_

d. 19

Hundredths : \_\_\_\_\_

In fraction form : \_\_\_\_\_



**Complete:**

a.  $3.7 = \underline{\hspace{2cm}}$  tenths.

c.  $198 \text{ tenths} = \underline{\hspace{2cm}}$  [as a decimal]

e.  $3.74 = \underline{\hspace{2cm}}$  hundredths.

g.  $39 \text{ tenths} = \underline{\hspace{2cm}}$  [as a decimal]

b.  $5.2 = \underline{\hspace{2cm}}$  hundredths.

d.  $291 \text{ hundredths} = \underline{\hspace{2cm}}$  [as a fraction]

f.  $89.5 = \underline{\hspace{2cm}}$  tenths.

h.  $2.14 = \underline{\hspace{2cm}}$  [hundredths]

**Put (✓) to the correct statement and (✗) to the incorrect one:**

a.  $7.02 = 7 \frac{2}{10}$

[      ]

b.  $14.80 = 14 \frac{8}{10}$

[      ]

c.  $32 \text{ tenths} = 3.2$

[      ]

d.  $175 \text{ hundredths} = 17.5$

[      ]

e.  $8.1 = 81 \text{ tenths}$

[      ]

f.  $30 \text{ hundredths} = \frac{30}{10}$

[      ]

**Circle the equations that show the equivalency:**

1.  $\frac{1}{2} = \frac{3}{6}$

2.  $\frac{2}{3} = \frac{2}{6}$

3.  $\frac{8}{10} = \frac{4}{10}$

4.  $\frac{8}{12} = \frac{4}{6}$

5.  $\frac{2}{3} = \frac{6}{9}$

6.  $\frac{4}{8} = \frac{0}{4}$

7.  $\frac{1}{4} = \frac{5}{8}$

8.  $\frac{2}{10} = \frac{4}{20}$

9.  $\frac{5}{10} = \frac{1}{2}$



Are the two decimals equivalent ? Write equivalent or not equivalent.

a.  $0.7$  and  $0.70$  \_\_\_\_\_

b.  $0.04$  and  $0.4$  \_\_\_\_\_

c.  $0.9$  and  $0.09$  \_\_\_\_\_

d.  $0.28$  and  $0.82$  \_\_\_\_\_

e.  $0.17$  and  $0.07$  \_\_\_\_\_

f.  $0.1$  and  $0.10$  \_\_\_\_\_





Write an equivalent decimal for each. You may use decimal models.

a. 0.8 \_\_\_\_\_

b. 0.7 \_\_\_\_\_

c. 0.90 \_\_\_\_\_

d. 0.2 \_\_\_\_\_

e. 0.5 \_\_\_\_\_

f. 0.10 \_\_\_\_\_

g. 0.40 \_\_\_\_\_

h. 0.6 \_\_\_\_\_



Are the two fractions equivalent? Write equivalent or not equivalent.

a.  $\frac{3}{10}$  and  $\frac{30}{100}$  \_\_\_\_\_

b.  $\frac{5}{100}$  and  $\frac{50}{10}$  \_\_\_\_\_

c.  $\frac{80}{100}$  and  $\frac{8}{10}$  \_\_\_\_\_

d.  $\frac{4}{100}$  and  $\frac{4}{10}$  \_\_\_\_\_

e.  $\frac{60}{100}$  and  $\frac{6}{10}$  \_\_\_\_\_

f.  $\frac{20}{100}$  and  $\frac{2}{100}$  \_\_\_\_\_



Write an equivalent fraction for each.

a.  $\frac{7}{10}$  \_\_\_\_\_

b.  $\frac{80}{100}$  \_\_\_\_\_

c.  $\frac{9}{10}$  \_\_\_\_\_

d.  $\frac{4}{10}$  \_\_\_\_\_

e.  $\frac{10}{100}$  \_\_\_\_\_

f.  $\frac{20}{100}$  \_\_\_\_\_

g.  $\frac{3}{10}$  \_\_\_\_\_

h.  $\frac{50}{100}$  \_\_\_\_\_



Fill the missing denominator or numerator. Circle the fraction that is more than 1 whole.

a.  $\frac{5}{10} = \frac{50}{\square}$

b.  $\frac{20}{100} = \frac{\square}{10}$

c.  $\frac{4}{10} = \frac{40}{\square}$

d.  $\frac{200}{100} = \frac{\square}{10}$

e.  $\frac{70}{\square} = \frac{7}{10}$

f.  $\frac{80}{10} = \frac{\square}{100}$

g.  $\frac{3}{10} = \frac{\square}{100}$

h.  $\frac{60}{100} = \frac{\square}{10}$

i.  $\frac{7}{10} = \frac{\square}{100}$

j.  $\frac{900}{100} = \frac{\square}{10}$

k.  $\frac{8}{\square} = \frac{80}{100}$

l.  $\frac{10}{100} = \frac{\square}{10}$





# Homework

Decompose the units to represent each number as **Tenths** and then write the number as a fraction:

1. 1

Tenth \_\_\_\_\_

In fraction form \_\_\_\_\_

2. 3

Tenths \_\_\_\_\_

In fraction form \_\_\_\_\_

3. 1.5

Tenths \_\_\_\_\_

In fraction form \_\_\_\_\_

4. 2.3

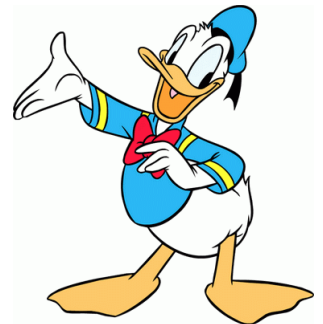
Tenths \_\_\_\_\_

In fraction form \_\_\_\_\_

5. 10.8

Tenths \_\_\_\_\_

In fraction form \_\_\_\_\_



Decompose the units to represent each number as **Hundredth** and then write the number as a fraction:

6. 1

Hundredths \_\_\_\_\_

In fraction form \_\_\_\_\_

7. 3

Hundredths \_\_\_\_\_

In fraction form \_\_\_\_\_

8. 1.5

Hundredths \_\_\_\_\_

In fraction form \_\_\_\_\_

9. 2.3

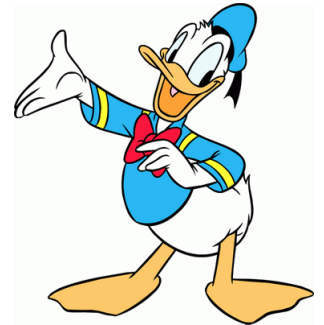
Hundredths \_\_\_\_\_

In fraction form \_\_\_\_\_

10. 10.8

Hundredths \_\_\_\_\_

In fraction form \_\_\_\_\_



**Record an equivalent fraction and decimal for each problem:**

1.  $\frac{1}{10}$

Fraction: \_\_\_\_\_

Decimal: \_\_\_\_\_

2.  $\frac{70}{100}$

Fraction: \_\_\_\_\_

Decimal: \_\_\_\_\_

3.  $\frac{6}{10}$

Fraction: \_\_\_\_\_

Decimal: \_\_\_\_\_

4. 0.4

Fraction: \_\_\_\_\_

Decimal: \_\_\_\_\_

5. 0.30

Fraction: \_\_\_\_\_

Decimal: \_\_\_\_\_

6. 0.9

Fraction: \_\_\_\_\_

Decimal: \_\_\_\_\_



7.  $\frac{10}{10}$

Fraction: \_\_\_\_\_

Decimal: \_\_\_\_\_

8.  $1\frac{4}{10}$

Fraction: \_\_\_\_\_

Decimal: \_\_\_\_\_

9. 2.1

Fraction: \_\_\_\_\_

Decimal: \_\_\_\_\_



Choose the correct answer from A, B, C or D:

1.  $0.2 =$  \_\_\_\_\_

- A.  $\frac{2}{10}$                       B.  $\frac{2}{100}$   
 C.  $\frac{22}{100}$                       D.  $\frac{20}{10}$

2.  $1.05 =$  \_\_\_\_\_

- A.  $1\frac{5}{10}$                       B.  $1\frac{5}{100}$   
 C.  $1\frac{50}{100}$                       D.  $1\frac{15}{100}$

3.  $\frac{13}{100} =$  \_\_\_\_\_

- A. 1.3                      B. 1.03  
 C. 0.13                      D. 1.30

4.  $5.7 =$  \_\_\_\_\_

- A.  $5\frac{7}{100}$                       B.  $5\frac{70}{100}$   
 C.  $\frac{57}{100}$                       D.  $7\frac{5}{10}$

5.  $8 =$  \_\_\_\_\_ hundredths.

- A. 0.08                      B. 8  
 C. 80                      D. 800

6.  $7.9 =$  \_\_\_\_\_ tenths.

- A. 0.79                      B. 79  
 C. 79                      D. 790

7.  $17.5 =$  \_\_\_\_\_ hundredths.

- A. 175                      B. 1750  
 C. 17500                      D. 1.75

8.  $20.9 =$  \_\_\_\_\_ tenths.

- A. 20.9                      B. 2.09  
 C. 209                      D. 2090



# Concept (3): Working With Decimals

Convert **Fractions to Decimals** and **Decimals to Fractions**:

1.  $\frac{2}{10} =$  \_\_\_\_\_

2.  $0.5 =$  \_\_\_\_\_

3.  $\frac{45}{100} =$  \_\_\_\_\_

4.  $0.45 =$  \_\_\_\_\_

5.  $\frac{6}{10} =$  \_\_\_\_\_

6.  $\frac{99}{100} =$  \_\_\_\_\_

7.  $0.03 =$  \_\_\_\_\_

8.  $\frac{78}{100} =$  \_\_\_\_\_

9.  $2.3 =$  \_\_\_\_\_

10.  $0.90 =$  \_\_\_\_\_

11.  $\frac{3}{10} =$  \_\_\_\_\_

12.  $0.6 =$  \_\_\_\_\_

13.  $0.1 =$  \_\_\_\_\_

14.  $0.11 =$  \_\_\_\_\_

15.  $\frac{90}{100} =$  \_\_\_\_\_

16.  $\frac{33}{100} =$  \_\_\_\_\_

17.  $1.7 =$  \_\_\_\_\_

18.  $\frac{47}{100} =$  \_\_\_\_\_

19.  $0.40 =$  \_\_\_\_\_

20.  $\frac{1}{100} =$  \_\_\_\_\_



## Using the place value chart, Put (&lt;), (&gt;) or (=):

1. 0.34 \_\_\_\_\_ 0.4

Ones	Decimal	Tenths	Hundredths
0	.	3	4
0	.	4	

2. 0.45 \_\_\_\_\_ 0.04

Ones	Decimal	Tenths	Hundredths
	.		
	.		

3. 0.23 \_\_\_\_\_ 0.3

Ones	Decimal	Tenths	Hundredths
	.		
	.		

4. 0.54 \_\_\_\_\_ 0.45

Ones	Decimal	Tenths	Hundredths
	.		
	.		

5. 0.62 \_\_\_\_\_ 0.26

Ones	Decimal	Tenths	Hundredths
	.		
	.		







Bag of figs

1.3 kg



Mangoes

2.01 kg



Plums

1.21 kg



Pomegranates

2.25 kg

Record the mass of each fruit on the place value chart.

Fruit	Ones	Decimal	Tenths	Hundredths
Figs				
Mangoes				
Plums				
Pomegranates				

1. Which item weighs the least?

---

2. Which item weighs the most?

---

3. Which items weigh more than the plums?

---

4. Which items weigh less than the mango?

---



### Compare Using (<), (>) or (=):

a. 0.2 ○ 0.13

b. 0.31 ○ 0.13

c. 0.34 ○ 0.04

d. 0.30 ○ 0.3

e. 0.35 ○ 0.3

f. 0.7 ○ 0.68

g. 0.18 ○ 0.4

h. 0.60 ○ 0.8

i. 0.07 ○ 0.7



## Compare Using (<), (>) or (=):

1.  $\frac{24}{100}$  \_\_\_\_\_ 0.6

2.  $\frac{6}{10}$  \_\_\_\_\_ .34

3. 1.04 \_\_\_\_\_ 98 Tenths

4.  $\frac{134}{100}$  \_\_\_\_\_ 1.03

5.  $\frac{9}{10}$  \_\_\_\_\_ 0.89

6. 7 Tenths \_\_\_\_\_ 0.7

7. 2.07 \_\_\_\_\_ 2 Ones and 7 Tenths

8.  $\frac{50}{100}$  \_\_\_\_\_ 5.00

9. 0.23 \_\_\_\_\_  $\frac{23}{10}$

10. 0.42 \_\_\_\_\_  $\frac{4}{10}$



## Choose the correct answer from A, B, C or D:

1. 7.2 ○ 7.15

A. &gt;      B. &lt;      C. =

2. 2.4 ○  $2\frac{42}{100}$

A. &gt;      B. &lt;      C. =

3.  $\frac{125}{100}$  ○ 1.3

A. &gt;      B. &lt;      C. =

4. Which of the following is greater than 1.64 ?

- A. 1.7                      B. 1.5  
C. 1.47                    D. 1.08

5. Which of the following is greater than 0.25 ?

- A. 0.22                    B.  $\frac{13}{100}$   
C. 0.4                      D. 15 hundredths

6. Which of the following is smaller than  $\frac{36}{100}$  ?

- A.  $\frac{4}{10}$                       B. 0.7  
C. 0.53                    D. 0.23

7. 3.74 ○  $\frac{374}{100}$

A. &gt;      B. &lt;      C. =

8. 17 hundredths ○ 17 tenths.

A. &gt;      B. &lt;      C. =



## Make Equivalent Fractions:

$$1. \frac{30}{100} = \frac{\boxed{\phantom{000}}}{10}$$

$$2. \frac{4}{10} = \frac{40}{\boxed{\phantom{000}}}$$

$$3. \frac{2}{10} = \frac{\boxed{\phantom{000}}}{100}$$

$$4. \frac{90}{100} = \frac{\boxed{\phantom{000}}}{10}$$

$$5. \frac{50}{100} = \frac{\boxed{\phantom{000}}}{10}$$



$$6. 1\frac{70}{100} = 1\frac{7}{\boxed{\phantom{000}}}$$

$$7. \frac{100}{100} = \frac{\boxed{\phantom{000}}}{10}$$

$$8. \frac{40}{10} = \frac{\boxed{\phantom{000}}}{100}$$

$$9. \frac{600}{100} = \frac{60}{\boxed{\phantom{000}}}$$

$$10. 2\frac{8}{10} = 2\frac{\boxed{\phantom{000}}}{100}$$



## Complete to find the result:

$$a. \frac{6}{10} + \frac{23}{100} = \frac{\phantom{00}}{100} + \frac{23}{100} = \frac{\phantom{00}}{100}$$

$$b. \frac{7}{10} + \frac{60}{100} = \frac{7}{10} + \frac{\phantom{00}}{10} = \frac{\phantom{00}}{10}$$

$$c. \frac{3}{10} + \frac{8}{100} = \frac{\phantom{00}}{100} + \frac{8}{100} = \frac{\phantom{00}}{100}$$

$$d. \frac{23}{100} + \frac{9}{10} = \frac{23}{100} + \frac{\phantom{00}}{100} = \frac{\phantom{00}}{100}$$

$$e. \frac{32}{100} + \frac{5}{10} = \frac{32}{100} + \frac{\phantom{00}}{100} = \frac{\phantom{00}}{100}$$

$$f. \frac{6}{10} + \frac{82}{100} = \frac{\phantom{00}}{100} + \frac{82}{100} = \frac{\phantom{00}}{100}$$



# Homework

Using the place value chart, Put (<), (>) or (=):

6. 0.80 \_\_\_\_\_ 0.09

Ones	Decimal	Tenths	Hundredths
	.		
	.		

7. 0.73 \_\_\_\_\_ 0.69

Ones	Decimal	Tenths	Hundredths
	.		
	.		

8. 0.10 \_\_\_\_\_ 0.1

Ones	Decimal	Tenths	Hundredths
	.		
	.		

9. 0.49 \_\_\_\_\_ 0.04

Ones	Decimal	Tenths	Hundredths
	.		
	.		

10. 0.27 \_\_\_\_\_ 0.7

Ones	Decimal	Tenths	Hundredths
	.		
	.		



## Compare Using (<), (>) or (=):

a.  $0.52 \bigcirc 0.54$

b.  $0.9 \bigcirc 0.82$

c.  $1.52 \bigcirc 1.45$

d.  $3.7 \bigcirc 3.70$

e.  $3.4 \bigcirc 4.56$

f.  $2.05 \bigcirc 2.15$



## Compare Using (<), (>) or (=):

a.  $\frac{24}{100} \bigcirc 0.6$

b.  $3.72 \bigcirc 3\frac{7}{100}$

c.  $\frac{6}{10} \bigcirc 0.34$

d.  $\frac{134}{100} \bigcirc 1.03$

e.  $\frac{200}{100} \bigcirc 0.20$

f.  $1.04 \bigcirc 98 \text{ tenths}$

g. 3 hundredths  $\bigcirc$  2 tenths

h.  $0.23 \bigcirc \frac{23}{10}$

i.  $\frac{8}{10} \bigcirc 0.79$

j. 7 tenths  $\bigcirc 0.7$

k.  $\frac{50}{100} \bigcirc 5.00$

l.  $3.7 \bigcirc 3\frac{17}{100}$

m.  $2.07 \bigcirc 2 \text{ Ones}, 7 \text{ Tenths}$

n.  $\frac{9}{10} \bigcirc 0.89$

o. 3 hundredths  $\bigcirc \frac{30}{100}$

p.  $0.42 \bigcirc \frac{4}{10}$

q.  $8.21 \bigcirc 8\frac{13}{100}$

r. 38 hundredths  $\bigcirc 324 \text{ tenths}$

s.  $7\frac{2}{100} \bigcirc 3.08$

t.  $0.37 \bigcirc 24 \text{ tenths}$



## Choose the correct answer from A, B, C or D:

9.  $12.6 < 12.67$

A. 6

B. 7

C. 8

D. 9

10.  $3.07 \bigcirc 3 \text{ Ones}, 7 \text{ Tenths.}$

A. &gt;

B. &lt;

C. =

11. Which of the following is NOT true ?

A.  $7.32 < 7.4$

B.  $3.78 > 3.54$

C.  $0.01 < 0.1$

D.  $\frac{13}{10} > 3.1$

12. Which of the following is true ?

A.  $0.53 > 0.55$

B.  $0.03 > 0.3$

C.  $1.1 > 0.99$

D.  $4.8 < 4.75$



### Make Equivalent Fractions:

a.  $\frac{6}{10} = \frac{\quad}{100}$

b.  $\frac{3}{10} = \frac{\quad}{100}$

c.  $\frac{4}{10} = \frac{40}{\quad}$

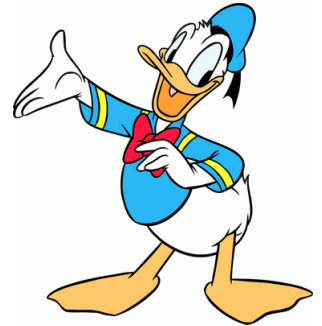
d.  $\frac{20}{100} = \frac{2}{\quad}$

e.  $\frac{70}{100} = \frac{7}{\quad}$

f.  $\frac{900}{100} = \frac{90}{\quad}$

g.  $\frac{80}{100} = \frac{8}{\quad}$

h.  $\frac{50}{100} = \frac{\quad}{10}$



### Find the result:

a.  $\frac{7}{10} + \frac{25}{100} = \underline{\hspace{2cm}}$

b.  $\frac{41}{100} + \frac{5}{10} = \underline{\hspace{2cm}}$

c.  $\frac{32}{100} + \frac{31}{100} = \underline{\hspace{2cm}}$

d.  $\frac{72}{100} + \frac{54}{100} = \underline{\hspace{2cm}}$

e.  $\frac{3}{10} + \frac{70}{100} = \underline{\hspace{2cm}}$

f.  $\frac{40}{100} + \frac{5}{10} = \underline{\hspace{2cm}}$

g.  $\frac{6}{10} + \frac{40}{100} = \underline{\hspace{2cm}}$

h.  $\frac{20}{100} + \frac{8}{10} = \underline{\hspace{2cm}}$





UNIT

11

Theme 3 | Fractions, Decimals, and Proportional Relationships

Unit 11

# Data with Fractions





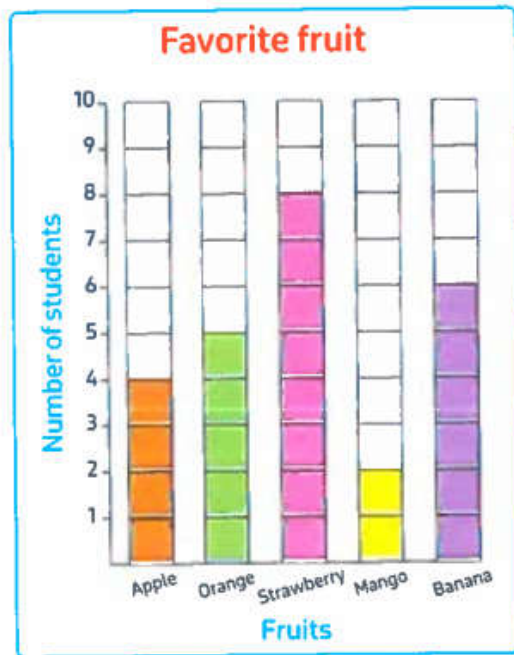
# Concept (1)

## Creating and Analyzing Graphs

### Remember

- You have learned before that data can be represented by more than one way.
- These data about student's favorite fruit.  
Sandra represented these data by a bar graph.

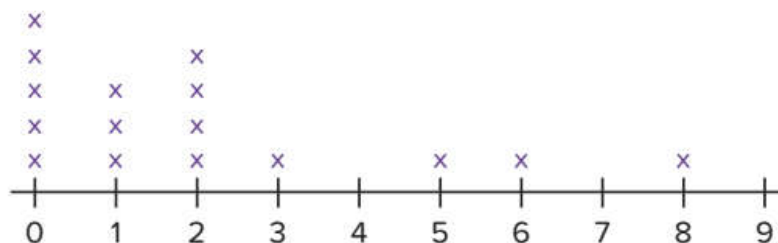
Favorite fruit	
Fruit	Number
Apple	4
Orange	5
Strawberry	8
Mango	2
Banana	6



A bar graph is used to compare data.

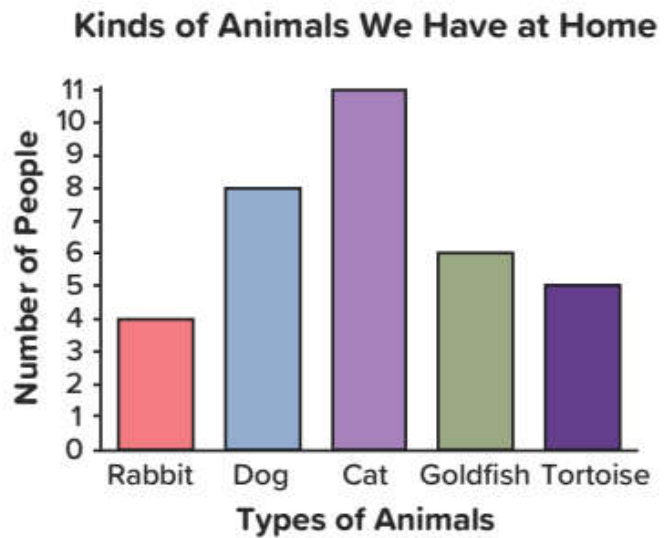
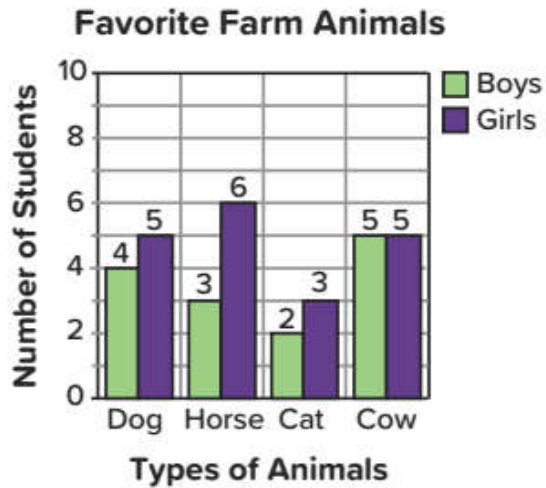


### Number of Animals at Home



Key  
x = 1 student





Favorite Flavors of Ice Cream

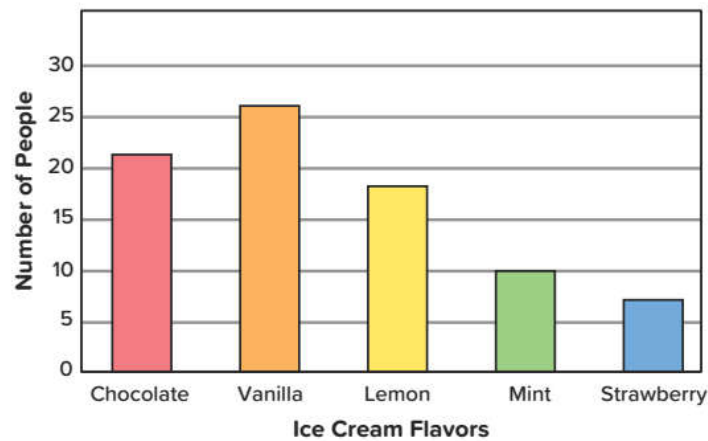


Table 1: Minimum and Maximum Monthly Temperatures in Cairo

Month	Minimum	Maximum
January	9	19
February	10	20
March	12	24
April	15	28

1. Could this data be represented in a double bar graph?



Table 2: Favorite Sports

Sport	Number of Students
Soccer	48
Basketball	24
Swimming	32
Gymnastics	12

2. Could this data be represented in a double bar graph?

---



Table 3: Favorite Foods

Food	Boys	Girls
Baklava	25	18
Feteer Meshaltet	17	12
Ful Medames	20	26
Tamiya	11	16

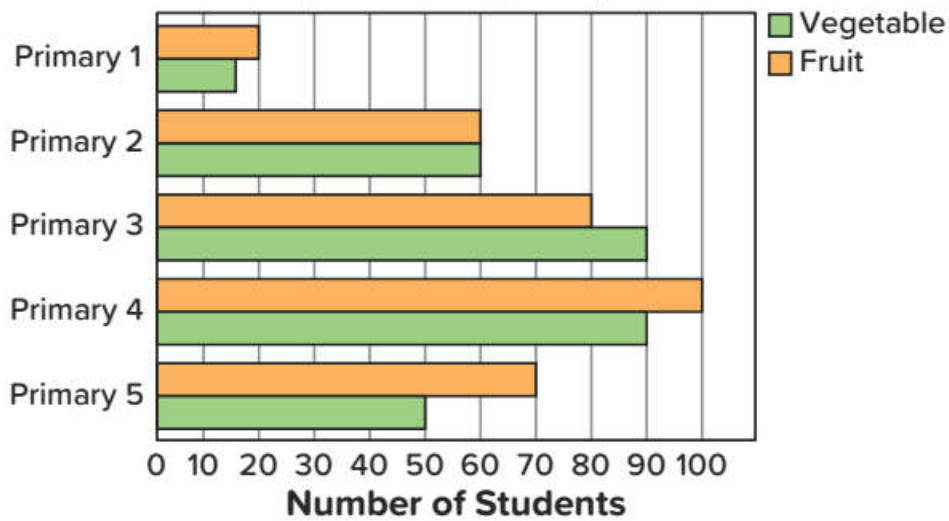
3. Could this data be represented in a double bar graph?

---





**Table 4: Fruits or Vegetables**  
(Choose only one.)



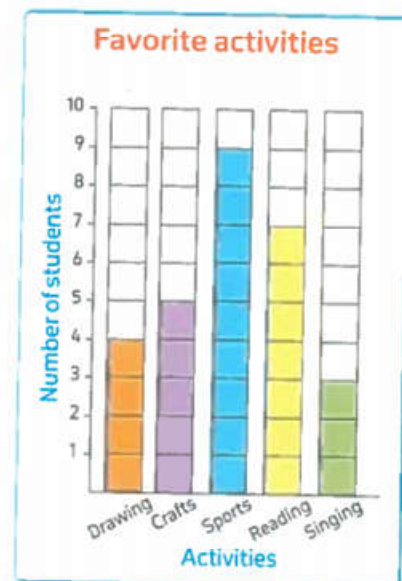
4. Which grade has the same number of students who like fruit and vegetables?
5. Which grade likes vegetables more than fruit?



The following graph shows student's votes for their favorite activities.

Complete the following table. Then answer the questions.

	Favorite activities				
Activity	Drawing	Crafts	Sports	Reading	Singing
Number					



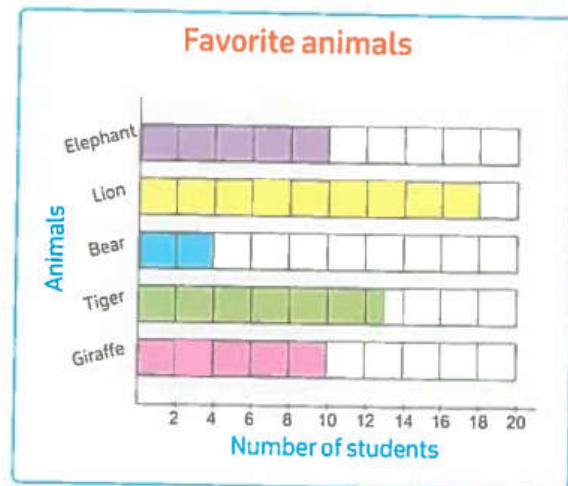
- a. Which activity do most students prefer ?
- b. Which activity was chosen by the fewest students ?
- c. How many students chose reading ?
- d. How many more students chose sports than crafts ?
- e. Which two activities their sum equals the number of students chose sports ?



The following graph shows student's votes for their favorite animal.

Answer the following questions.

- Which animal is liked the most ?
- Which animal is liked the least ?
- How many students liked tiger ?
- Which two animals were liked by the same number of students ?
- How many more students liked tiger than bear ?



The following double bar graph shows the sum of money in pounds which Hany and Enas saved in 5 consecutive months. Observe the graph , then answer the questions.



- What is the highest amount did Hany save ? Which month ?
- What is the highest amount did Enas save ? Which month ?
- What is the total saved amount for February ?
- What is the total amount did Hany save in all ?
- What is the total amount did Enas save in all ?
- Which month did Hany and Enas save the same amount ?
- Who saved the most ? Who saved the least ?
- What is the difference between their amount in April ?



A meteorologist compares rain fall in 2000 and 2020 in different countries in sub-saharan Africa.

Circle the best type of graph that represents this data.

Line plot

bar graph

pictograph

double bar graph



The data showing the favorite fast food of boys and girls of grade four.

Fast Food	Pizza	Noodles	Pasta	Burgers
Boys	25	40	15	25
Girls	30	35	30	45

Circle the best type of graph that represents this data.

Line plot

bar graph

pictograph

double bar graph



Use the following data to make a line plot, then answer the questions.

a. 11 kg ,  $12 \frac{1}{4}$  kg ,  $11 \frac{3}{4}$  kg ,  $11 \frac{1}{2}$  kg , 12 kg ,  $11 \frac{1}{2}$  kg ,  $11 \frac{1}{4}$  kg ,  $11 \frac{1}{4}$  kg ,  $11 \frac{1}{2}$  kg , 12 kg



1. Give the line plot a title.
2. What is the most common record ?
3. What is the least common record ?





The following situations need to be represented.

Choose from the opposite table the suitable data graphing.

**Hint:** Some data can be represented by more than one way.

Bar graph

Double bar graph

Line plot

- Data about number of siblings.
- Favorite animal between boys and girls.
- Favorite day of the week.
- Data about days spent at the beach.
- Data about toys sales during 4 months of 2 years.
- The votes are : Math , Arabic , Math , Math , English , Science , Science , Math , Arabic , Math , English , English
- The lengths are :  $15\frac{1}{2}$  ,  $15\frac{1}{4}$  , 15 , 16 ,  $16\frac{1}{4}$  ,  $15\frac{3}{4}$  ,  $14\frac{3}{4}$  , 16 ,  $16\frac{1}{2}$  , 15 , 15 ,  $14\frac{1}{2}$  ,  $16\frac{3}{4}$

h.

Favorite activity				
Activity	Reading	Drawing	Art	Sport
Number	85	55	70	100

i.

Sport Students	Basketball	Ballet	Football	Tennis
Boys	5	2	10	6
Girls	7	7	3	6

j.

Length of pencil						
Measurement	$10\frac{1}{2}$	$11\frac{1}{2}$	$12\frac{1}{2}$	$13\frac{1}{2}$	$14\frac{1}{2}$	$15\frac{1}{2}$
Number	3	5	2	1	6	7



# Homework

3 m ,  $3\frac{1}{3}$  m , 4 m ,  $4\frac{1}{3}$  m ,  $3\frac{2}{3}$  m ,  $3\frac{1}{3}$  m ,  $4\frac{2}{3}$  m ,  $4\frac{1}{3}$  m  
 , 4 m , 3 m ,  $3\frac{1}{3}$  m ,  $4\frac{2}{3}$  m.



1. Give the line plot a title.
2. What is the most common record ?
3. What is the least common record ?



The following table can be represented by

Subject	Arabic	English	Math	Science
Bassem	30	35	39	33
Mona	25	40	37	38

- A. A line plot.                      B. A bar graph.                      C. A double bar graph.



The following data show the heights of 20 pupils in centimeters in class 4/A

110	111	109	108	100	101	103	105	103	104
102	100	103	105	110	104	106	100	109	103

What is the suitable method of representing this data ?

- A. A line plot.                      B. A bar graph.                      C. A double bar graph.





Farida collected data about training time after school on a day for her friends to the nearest  $\frac{1}{2}$  an hour as follows :

1	2	$\frac{1}{2}$	$2\frac{1}{2}$	1	2	3	1	$\frac{1}{2}$	2	$1\frac{1}{2}$
2	$1\frac{1}{2}$	2	1	$1\frac{1}{2}$	$\frac{1}{2}$	2	$2\frac{1}{2}$	2	1	$\frac{1}{2}$

Help Farida show the data in the table and then represent these data by a line plot.



Training time		
Time	Tally	Number
$\frac{1}{2}$		
1		
$1\frac{1}{2}$		
2		
$2\frac{1}{2}$		
3		



Complete the following table to find the total.

Length of jumps		
Length	Tally	Total
$\frac{1}{3}$		
$\frac{2}{3}$		
1		
$1\frac{1}{3}$		
$1\frac{2}{3}$		
2		

Represent the data of the table by a line plot.



Which type of graph is suitable for this data ?

- A. Double bar graph.      B. Line plot.  
C. Bar graph.

Name	Ahmed	Nora	Sally	Ola
Age	13	17	15	10



Which type of graph is suitable for this data ?

Subject	Math	English	Arabic	Science	Art
Hany	20	19	15	18	17
Mona	17	20	19	20	15

- A. Double bar graph.      B. Line plot.      C. Bar graph.



Which type of graph is suitable for this data ?

Number of hours	0	1	2	3	4	5
Number of students	2	4	10	11	3	1

- A. Double bar graph.      B. Line plot.      C. Pictograph.



Which type of graph is suitable for this data ?

- A. Double bar graph.  
B. Line plot.  
C. Bar graph.

Evaluation	Tally	Total
Excellent		2
V.good		8
Good		6
Pass		4



Which type of graph is suitable for this data ?

- A. Double bar graph.  
B. Line plot.  
C. Bar graph.

1	3	2	5	1	4
3	2	4	1	3	1
2	1	3	4	1	5



From the opposite tally table  
the value of X is \_\_\_\_\_

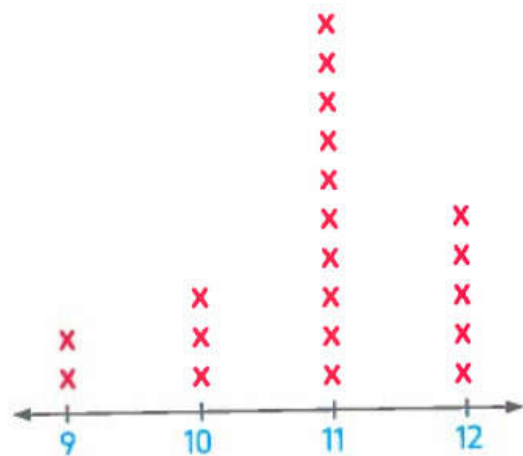
- A. 6
- B. 7
- C. 8
- D. 9

Name	Tally	Number
Amgad		4
Ola		5
Nora		10
Alaa		X
Noha		2
Total		30



In the opposite line plot, if it represents  
the ages of 40 students in grade 4, then  
each X stands for \_\_\_\_\_ students.

- A. one
- B. two
- C. three
- D. four



في هذا الجزء يقوم الطالب بحل مسألة واحدة يوميا حتى نهاية العام حتى يتقن عملية القسمة المطولة

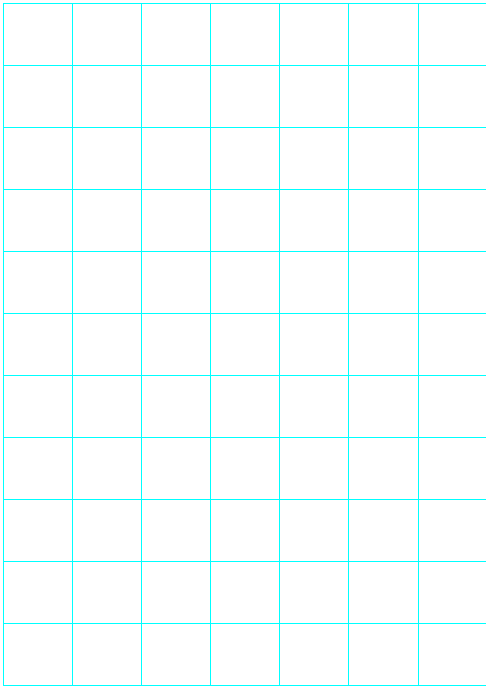
$$541 \div 4 =$$



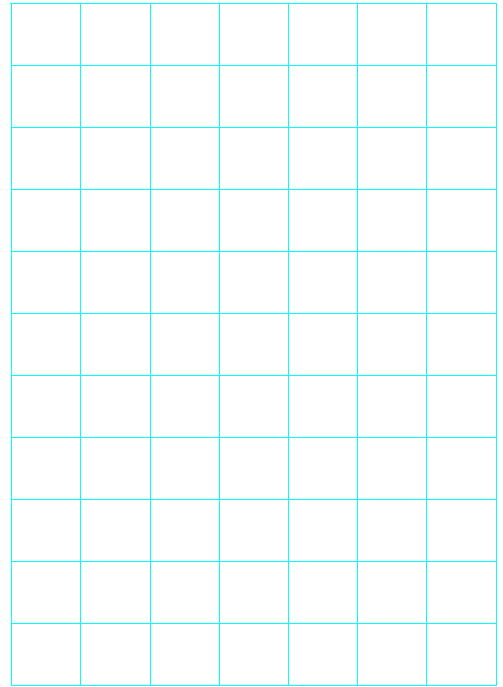
$$115 \div 5 =$$



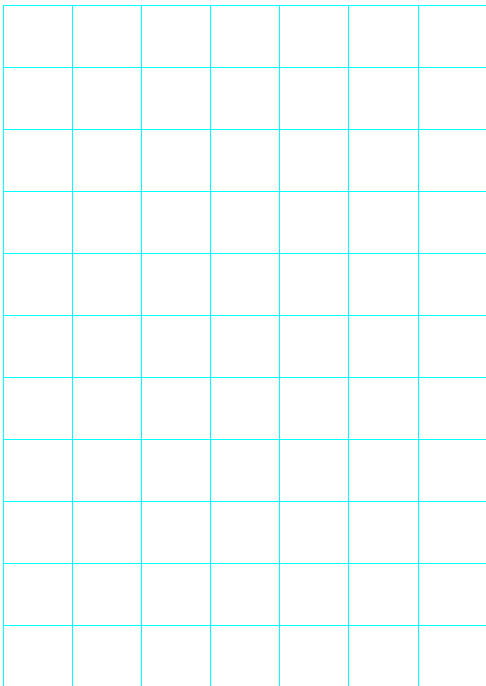
$250 \div 2 =$



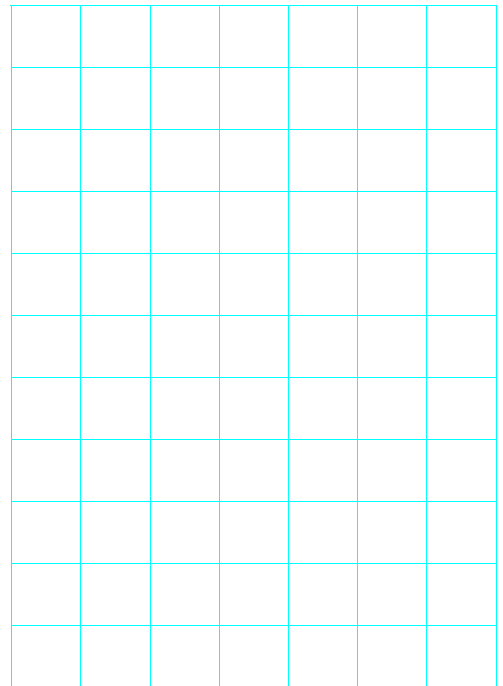
$373 \div 3 =$



$265 \div 5 =$

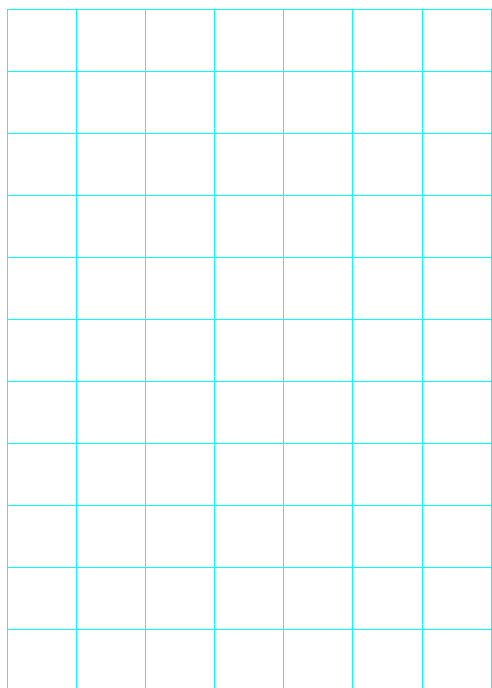


$254 \div 4 =$





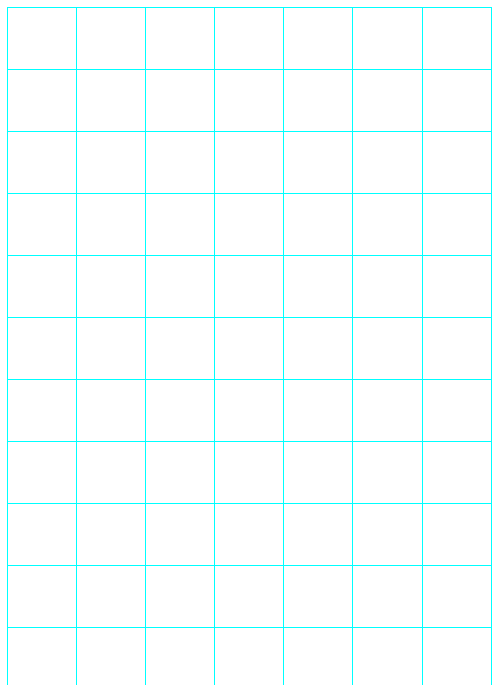
$228 \div 5 =$



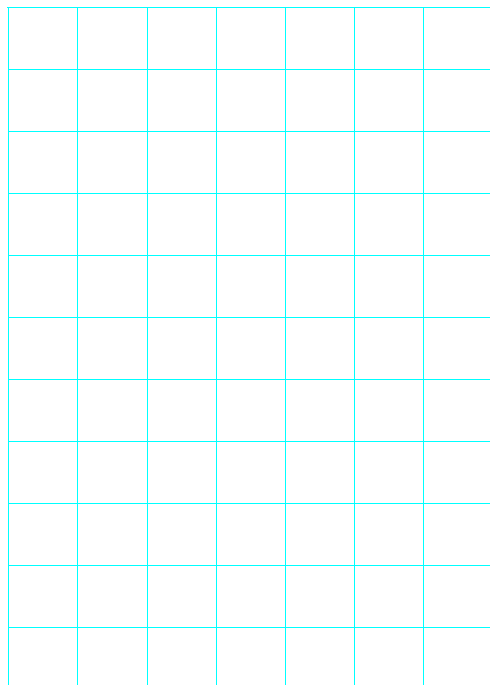
$216 \div 6 =$



$432 \div 8 =$



$441 \div 7 =$



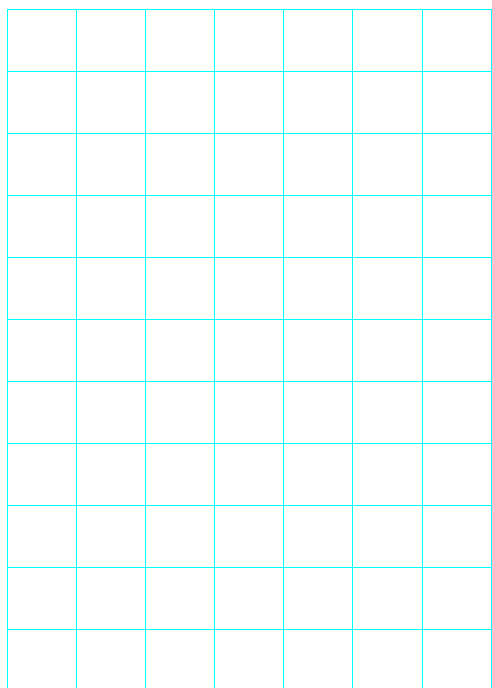
$$212 \div 4 =$$

[illegible]

$$1926 \div 6 =$$

[illegible]

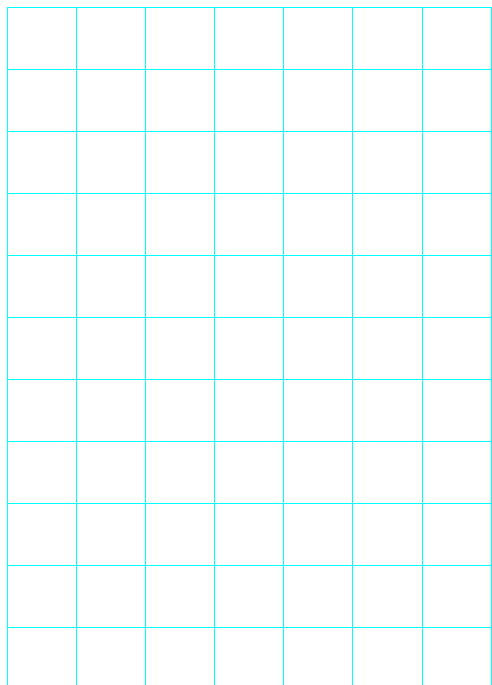
$1257 \div 5 =$



$1260 \div 4 =$



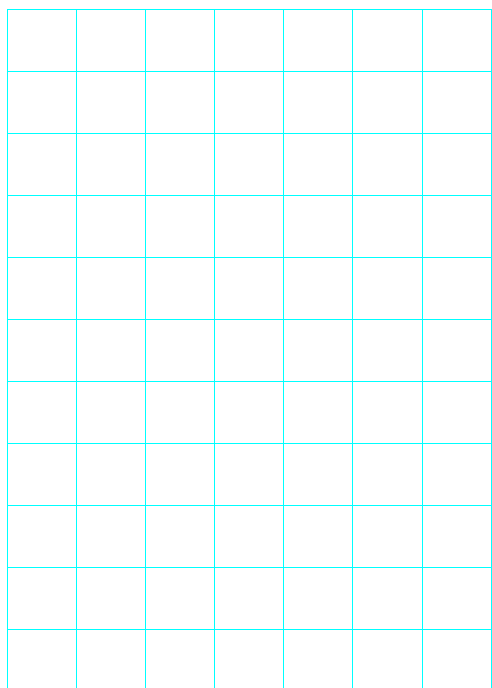
$1525 \div 5 =$



$2410 \div 6 =$



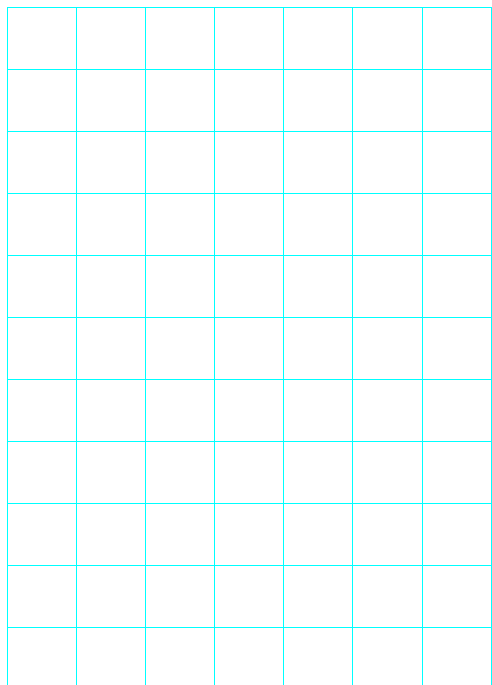
$632 \div 2 =$



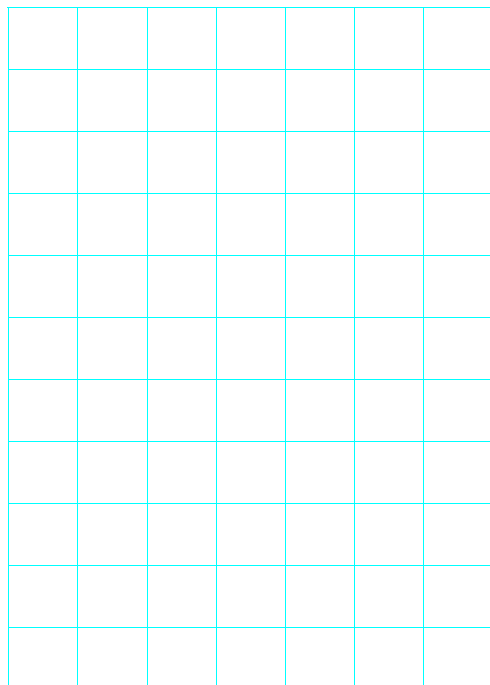
$965 \div 4 =$



$1290 \div 2 =$



$2117 \div 5 =$



$$1596 \div 3 =$$

[illegible]

$$2524 \div 4 =$$



$$1258 \div 5 =$$

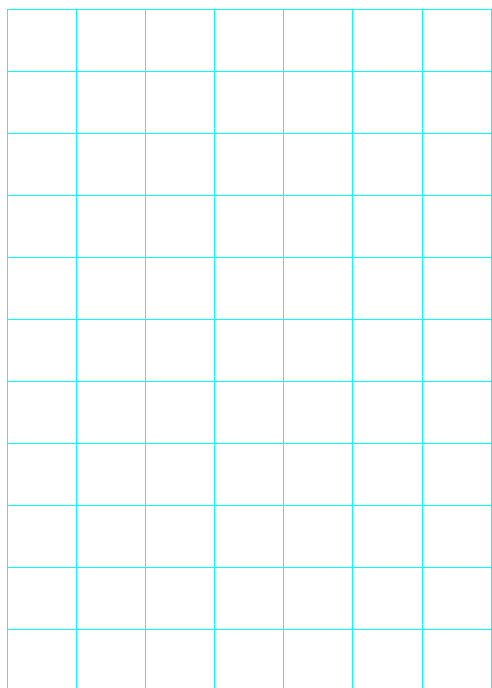
[illegible]

# 3106 ÷ 5 =

[illegible]



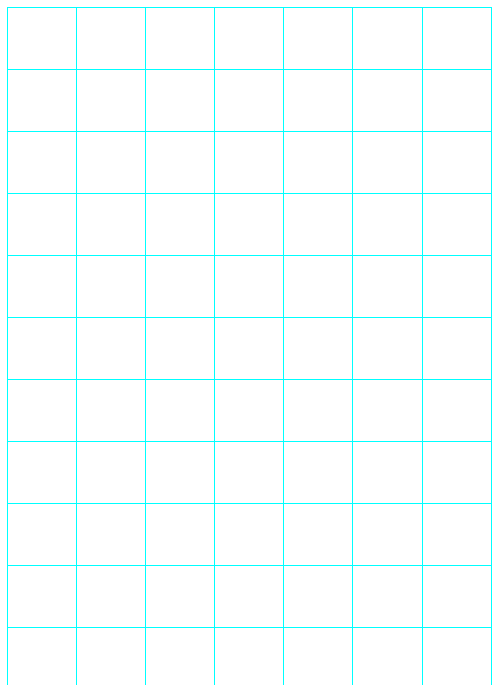
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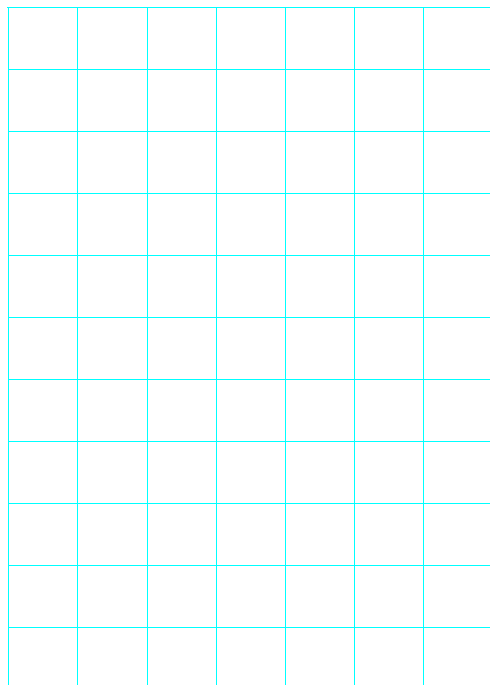
$225 \div 3 =$



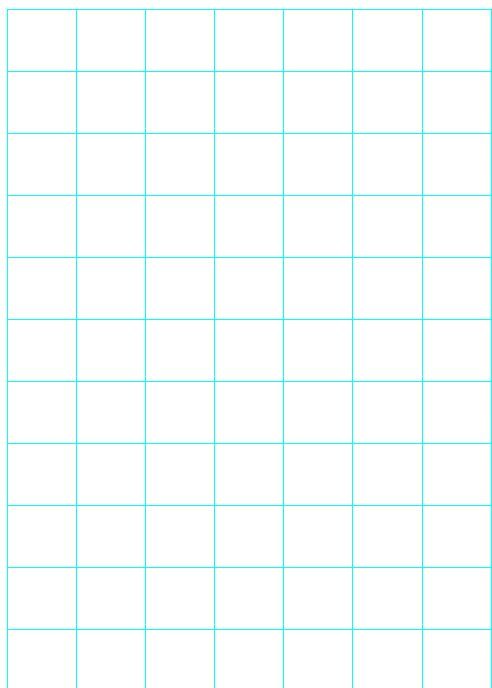
$1300 \div 4 =$



$1506 \div 6 =$



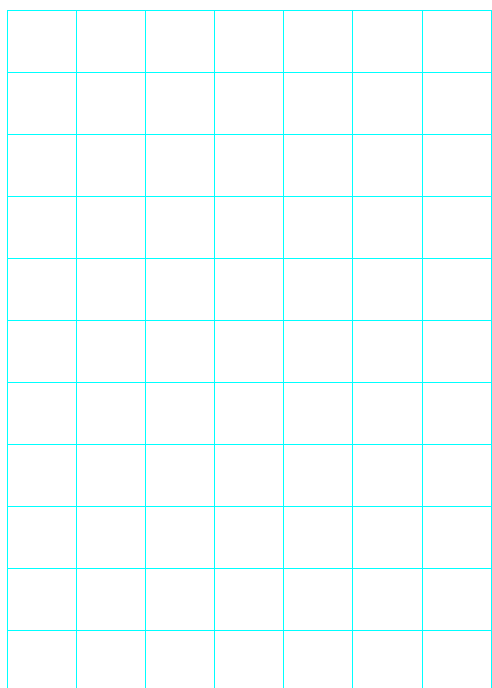
$3078 \div 9 =$



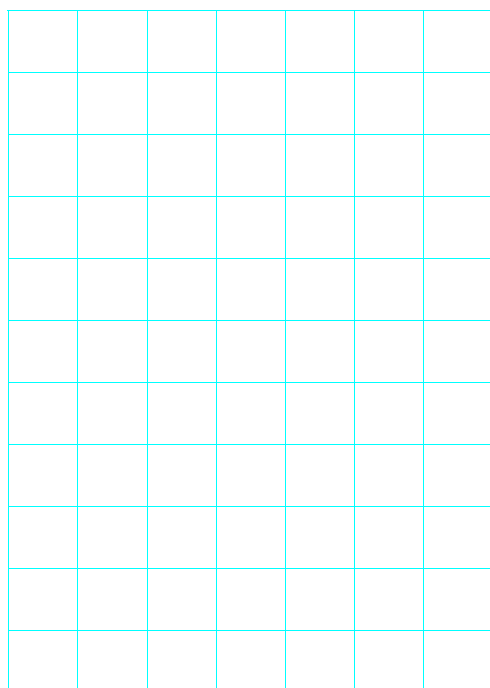
$434 \div 8 =$



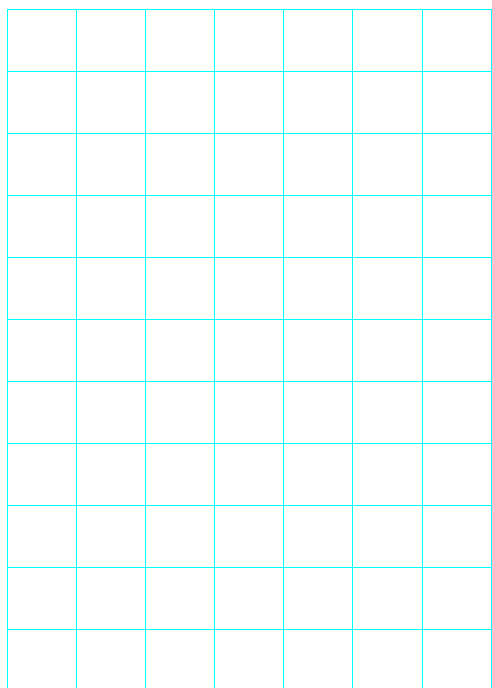
$436 \div 7 =$



$1608 \div 4 =$



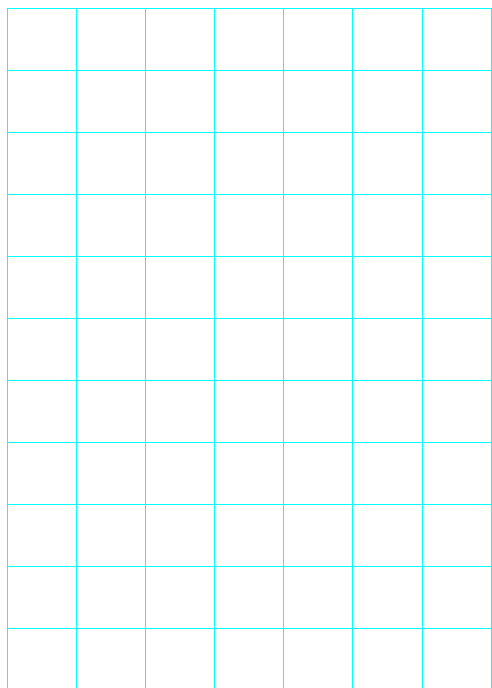
$2560 \div 5 =$



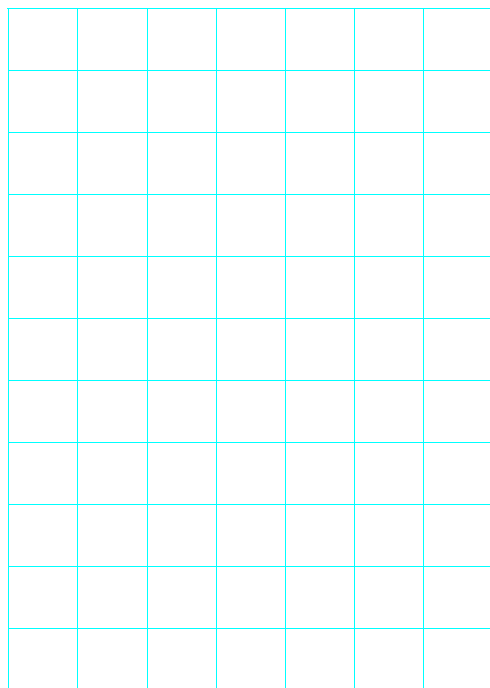
$1063 \div 2 =$



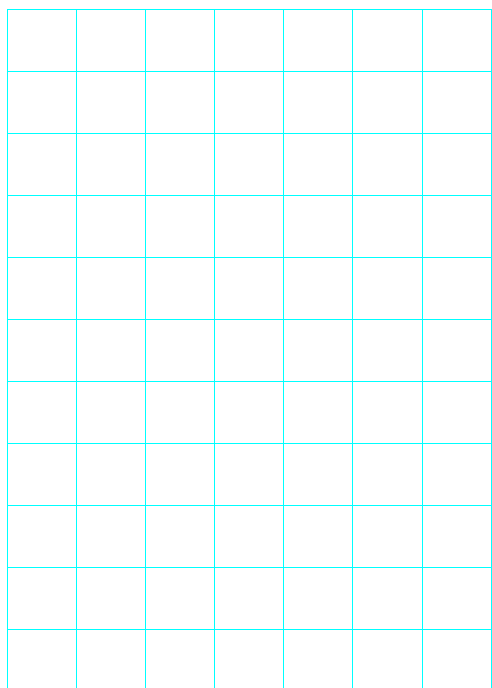
$2671 \div 5 =$



$1269 \div 3 =$



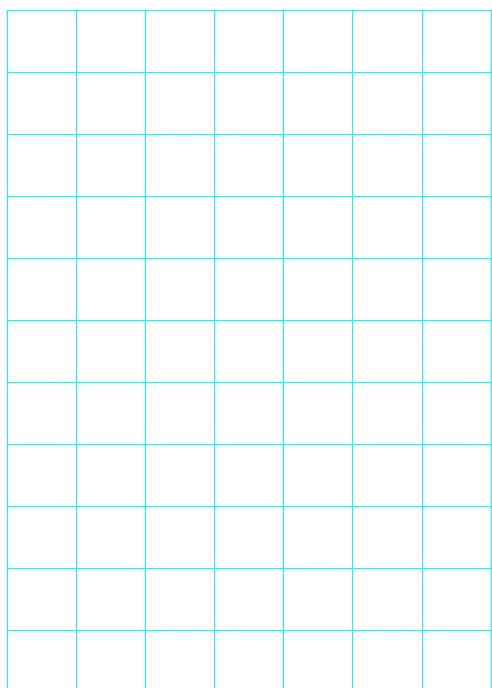
$1410 \div 6 =$



$2172 \div 4 =$



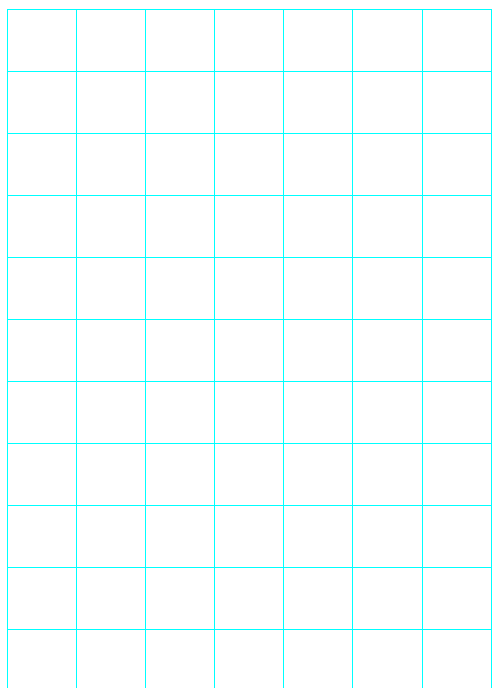
$2175 \div 5 =$



$1305 \div 2 =$



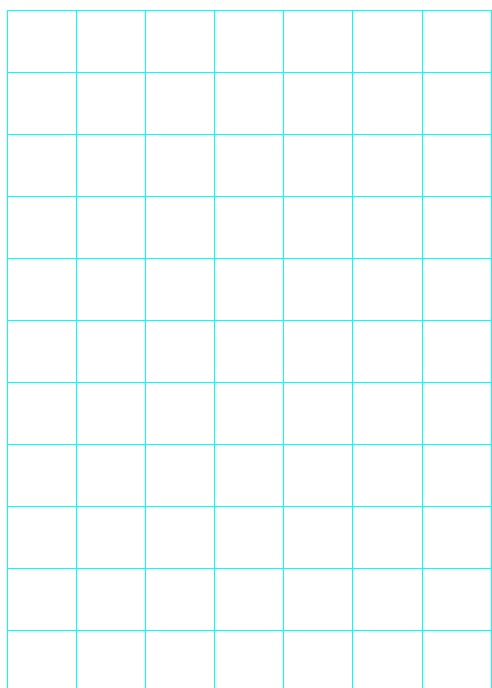
$3204 \div 6 =$



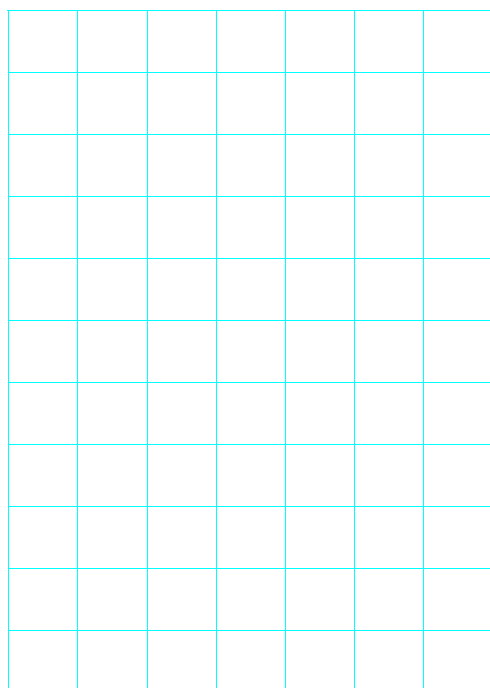
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$1617 \div 7 =$

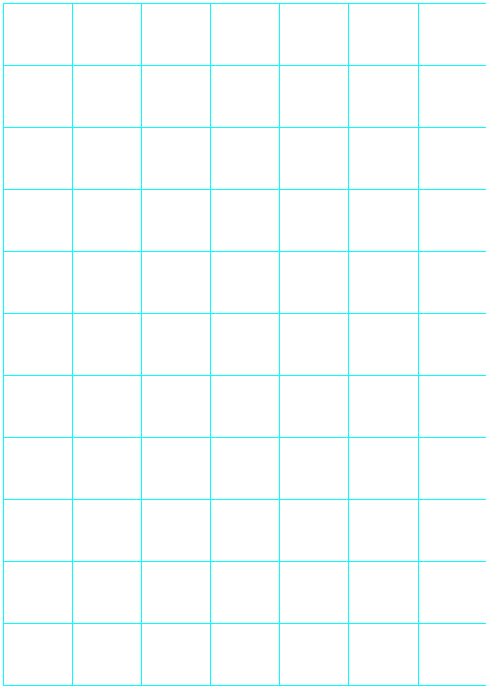


$1917 \div 9 =$

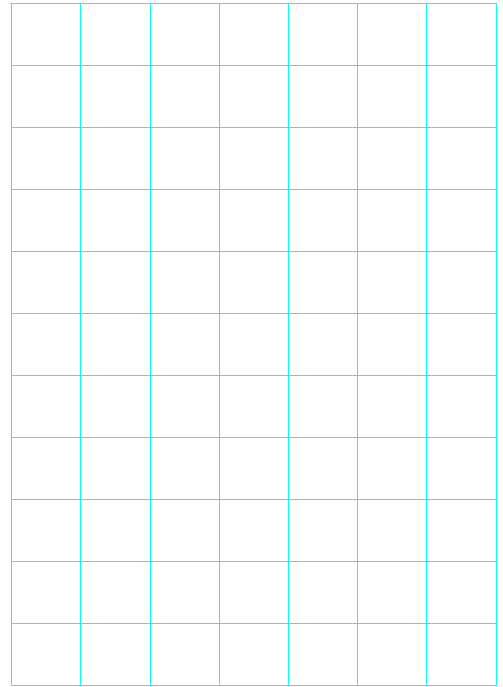




$3207 \div 6 =$



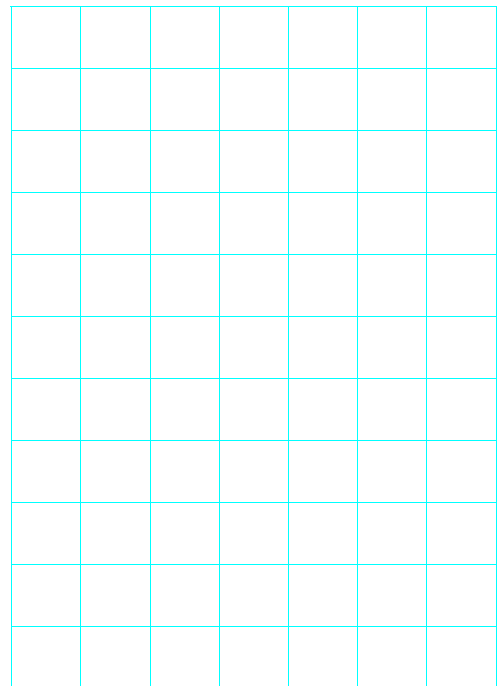
$2583 \div 8 =$



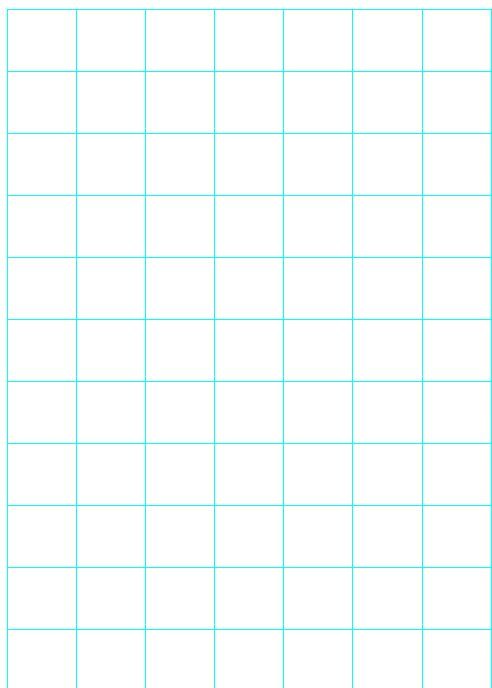
$1619 \div 7 =$



$1920 \div 9 =$



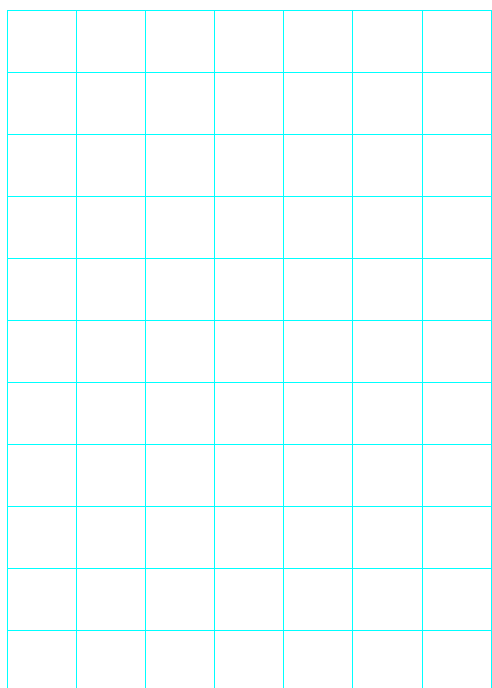
$250 \div 2 =$



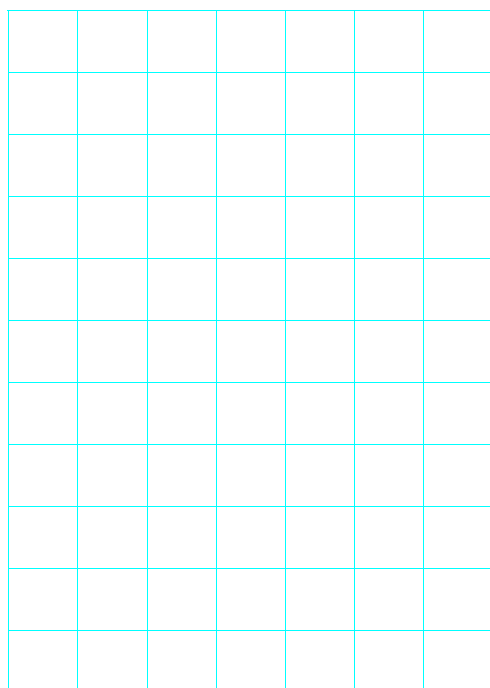
$373 \div 3 =$



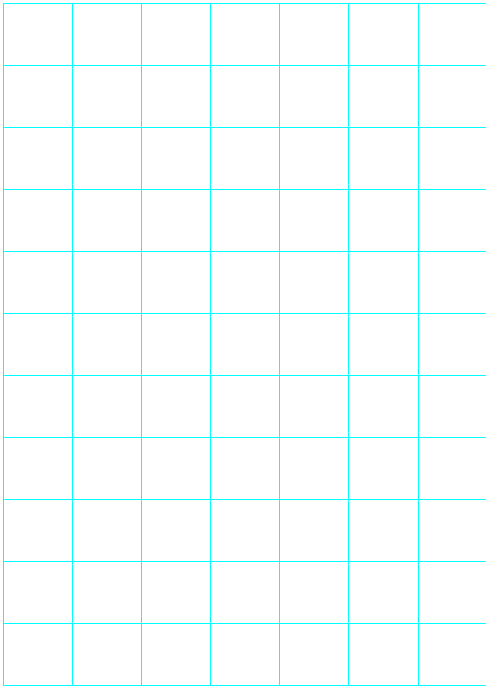
$265 \div 5 =$



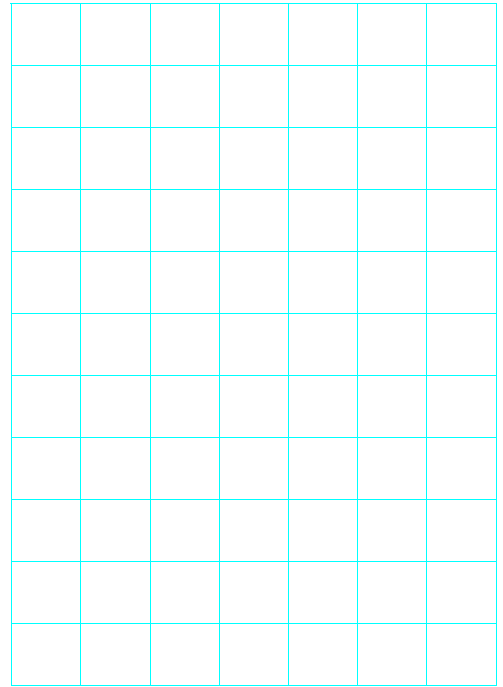
$254 \div 4 =$



$228 \div 5 =$



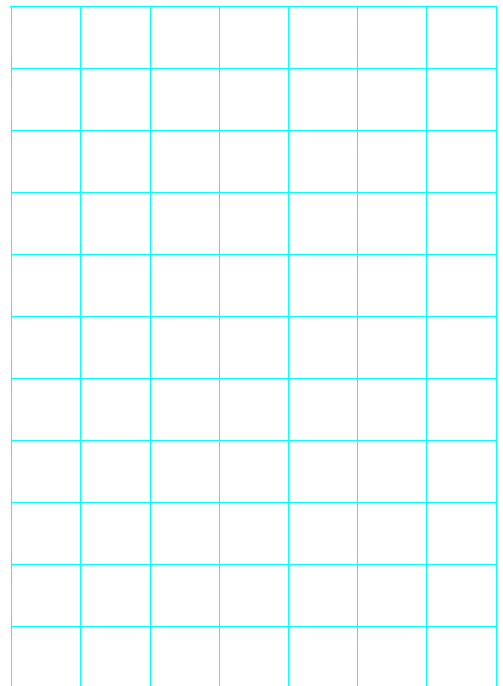
$216 \div 6 =$



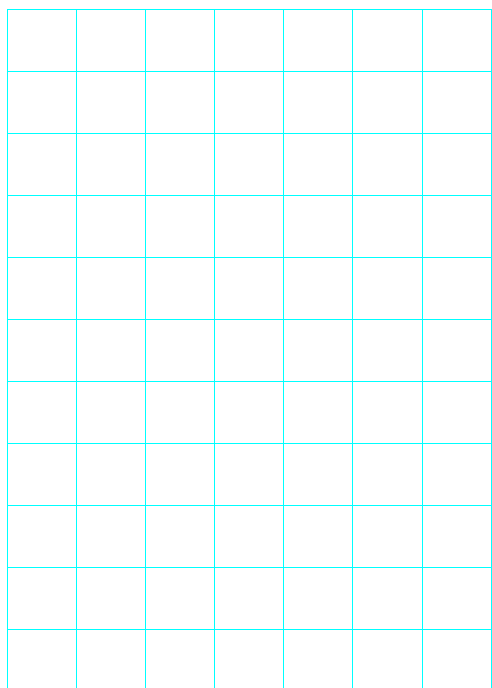
$432 \div 8 =$



$441 \div 7 =$



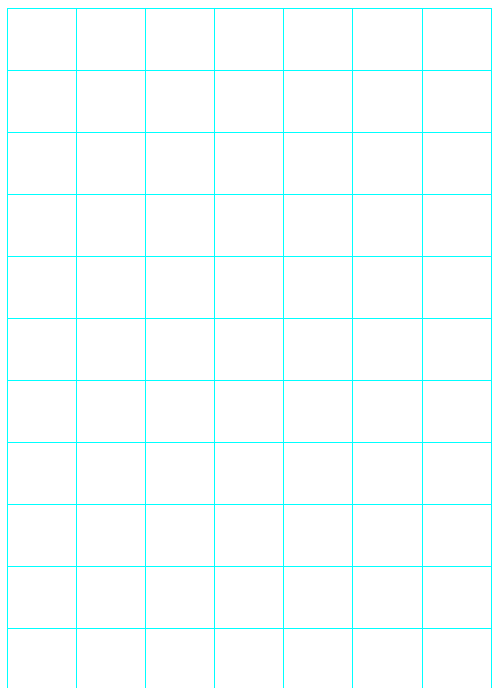
$212 \div 5 =$



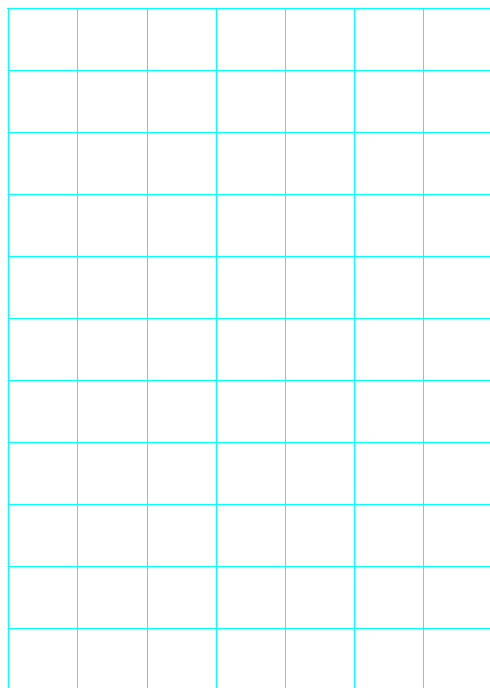
$212 \div 4 =$



$1536 \div 3 =$



$1926 \div 6 =$



$$1257 \div 5 =$$

[illegible]

$$1260 \div 4 =$$



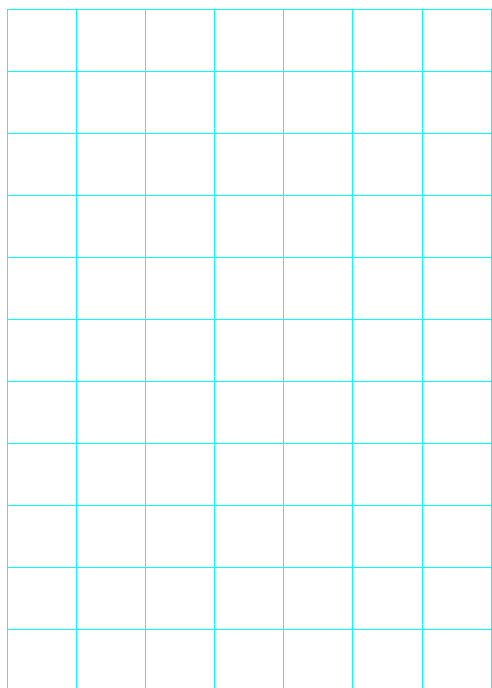
$$1525 \div 5 =$$

$$2410 \div 6 =$$





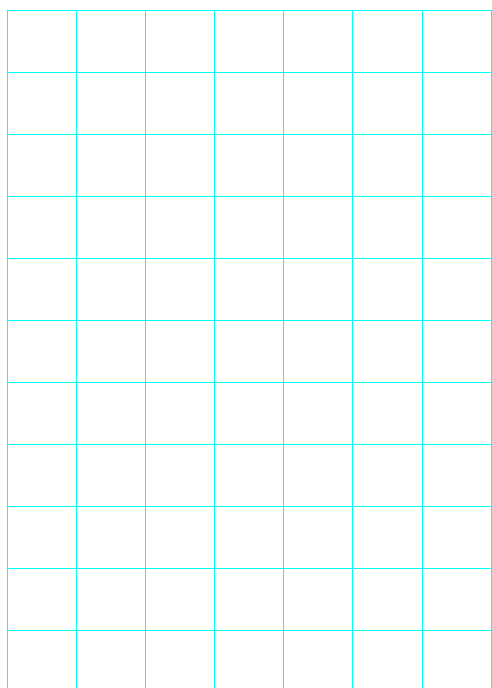
$632 \div 2 =$



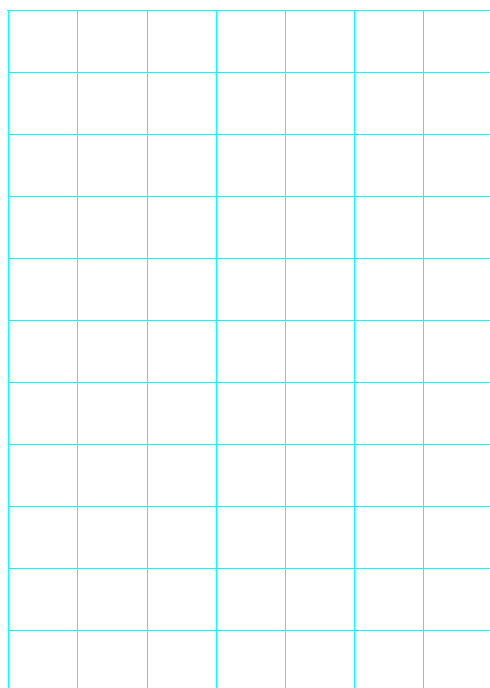
$965 \div 4 =$



$1290 \div 2 =$



$2117 \div 5 =$



$1596 \div 3 =$


$2524 \div 4 =$

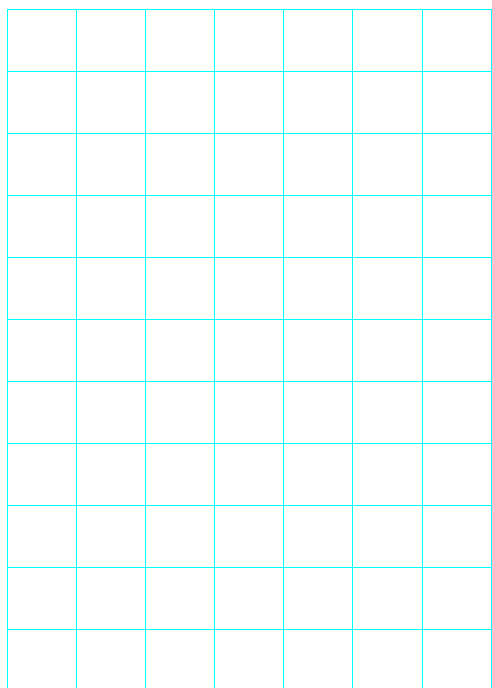



$1258 \div 5 =$


$3106 \div 5 =$



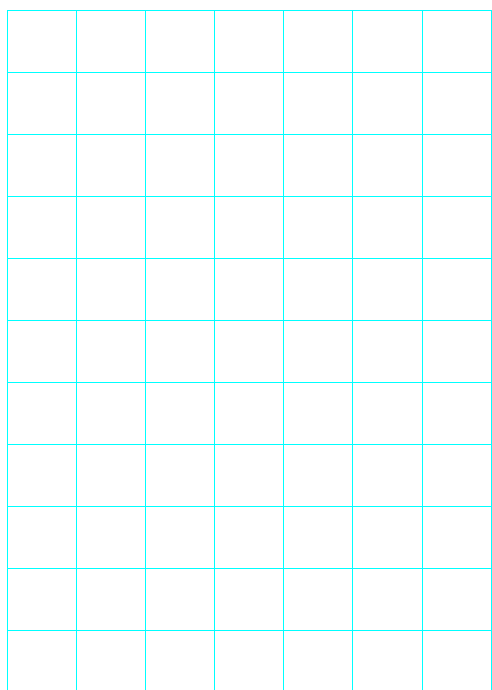

$1029 \div 2 =$



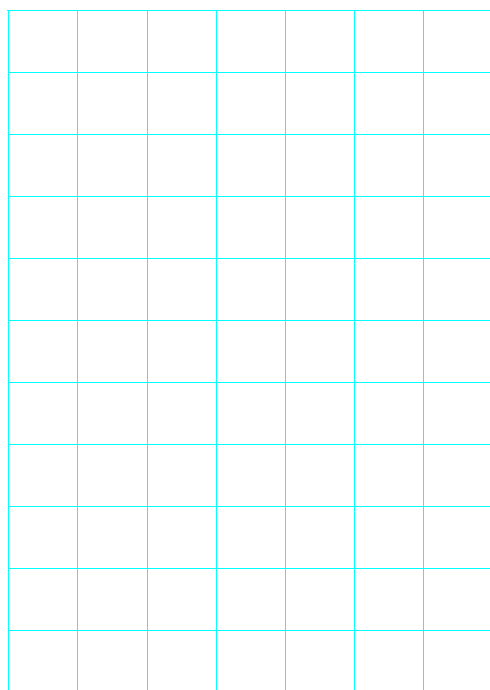
$225 \div 3 =$



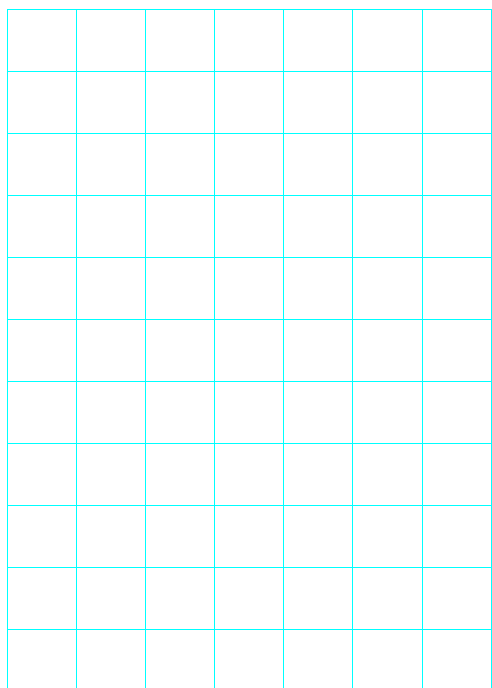
$1300 \div 4 =$



$1506 \div 6 =$



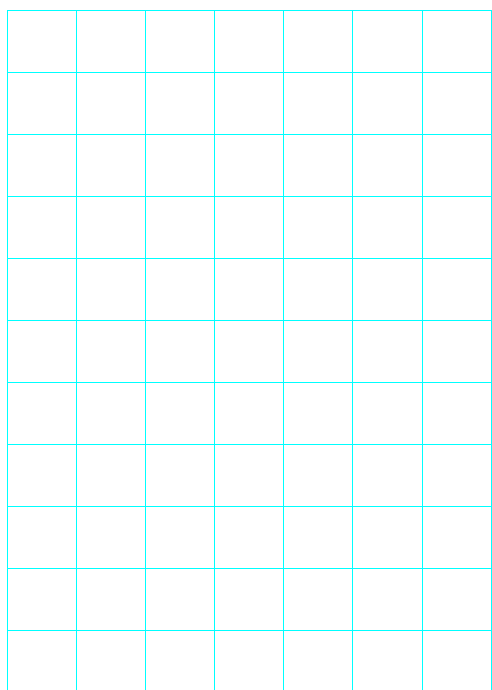
$3078 \div 9 =$



$434 \div 8 =$



$436 \div 7 =$



$1608 \div 4 =$

